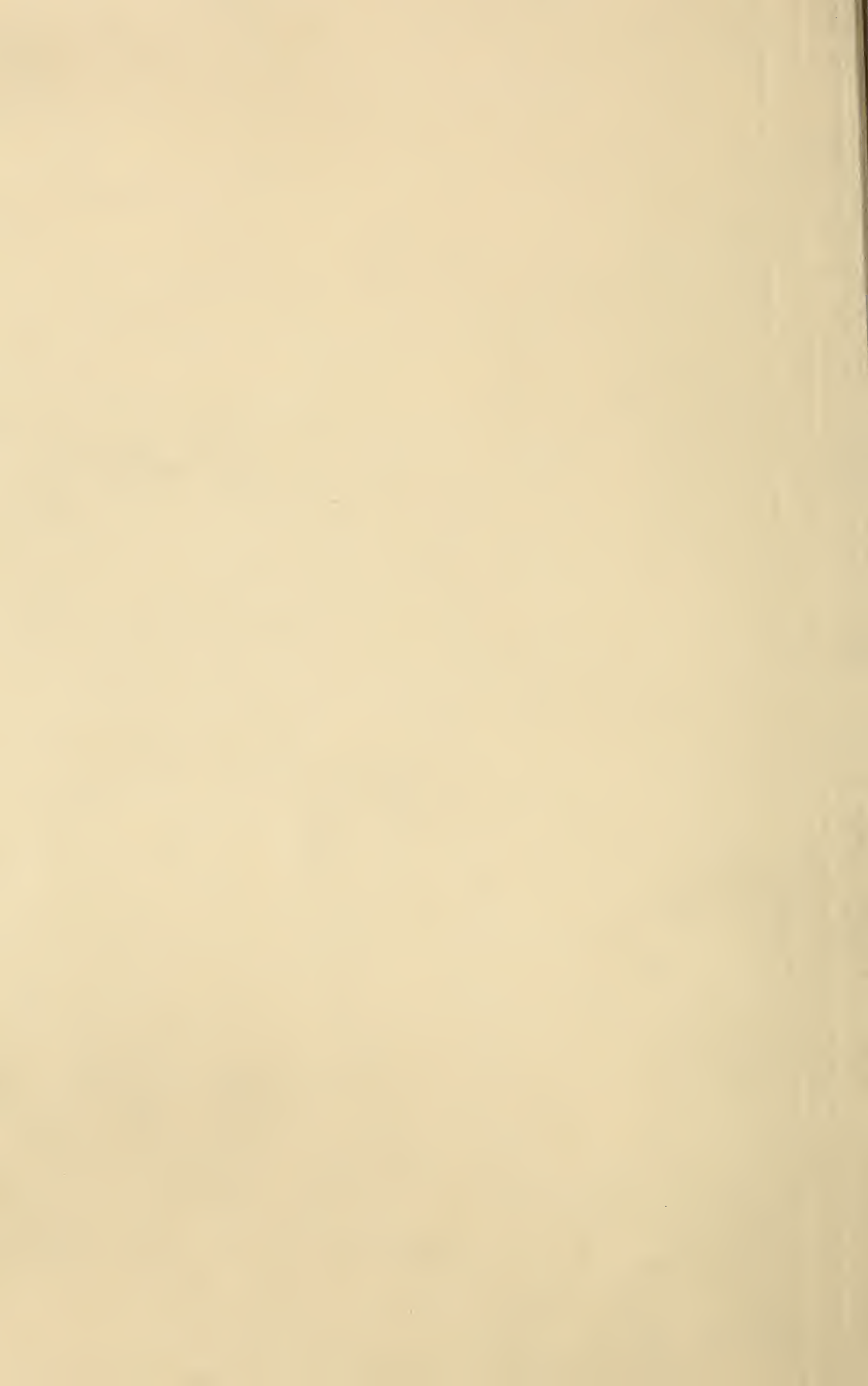


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Gleanings in Bee Culture

VOL. XXXVIII

JULY 1, 1910

NO. 13

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Siftings Conversations with Doolittle

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Heads of Grain



Health Notes

A New Bee-book!

WE ARE fortunate in securing from the publishers just at this season a new book on bee culture, entitled "How to Keep Bees for Profit." It covers a field quite new in that it gives information to beginner and experienced bee-keeper alike, and covers all conditions, for the man who keeps but a colony or two in his back yard, and the one who numbers his colonies by the hundred and has outyards. A list of the phases of the subject covered will give you an idea of the real value of the book. They are as follows:

Chapter	1	Bees, Fruit, Honey, and Money.
"	2	Physiology of the Honey-bee.
"	3	Races of Bees.
"	4	The Home of the Bees.
"	5	The Bee Family.
"	6	How to Start Bee-keeping; Hives and Tools; Transferring Bees.
"	7	How to Quiet and Handle Bees; How to Avoid Stings; Remedies.
"	8	Why Bees Swarm; How to Hive a Swarm; How to Control Swarming.
"	9	Raising Queen Bees; How to Introduce a Queen.
"	10	How to Produce Comb Honey.
"	11	How to Produce Extracted Honey.
"	12	How to Make Increase.
"	13	Location of the Apiary; Out-apiaries; Moving Bees.
"	14	Diseases and Enemies of Bees.
"	15	Marketing the Honey-crop.
"	16	Beeswax; Its Uses; How to Render it.
"	17	Honey as a Food and Medicine.
"	18	Robber Bees; How to Prevent Robbing.
"	19	Feeding.
"	20	How to Winter Bees Successfully.
"	21	Sources of Honey

The book is so arranged that one may refer to the particular subject wanted without reading a lot of matter in which he has no immediate interest. The author is a practical bee-keeper, and writes in a simple manner which can not but be understood by the veriest novice, and is at the same time a convincing argument for the more advanced bee-keeper. The book contains 325 pages, and is fully illustrated by engravings which show details of the work at every step. No bee-keeper's library is complete without this book. Sold only in connection with a year's subscription to GLEANINGS IN BEE CULTURE. \$1.50 for the combination. If you are already a subscriber we will advance your subscription a year and send the book at once on receipt of the price. Get it NOW so that you may profit by its teachings this season.

THE A. I. ROOT CO., Medina, Ohio:

For the enclosed \$1.50 please send me at once one copy of HOW TO KEEP BEES FOR PROFIT, and enter my name for a year's subscription to GLEANINGS IN BEE CULTURE.

Name.....

Address.....

Town..... State.....

Cleanings in Bee Culture

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VOL. XXXVIII

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Editorial

EDITOR HUTCHINSON speaks very highly of Dr. Lyon's new book, entitled "How to Keep Bees for Profit."

WE are now coming to the time to sow buckwheat. It is a crop that always pays. See page 7.

THE secret of preventing robbing, in removing honey from the hives and extracting it, says E. D. Townsend in the *Review*, is to prevent a single bee from going home with a load of stolen honey. Quite right you are, friend Townsend.

PROSPECTS for a basswood flow, where basswoods have not been cut, are good. From reports that we have received from various sections of the country, even if there should be a drouth checking clover, it will not greatly affect the yield from basswood. As the roots of trees will reach much deeper into the soil they will secure the necessary moisture.

POWER VS. HAND-DRIVEN EXTRACTORS.

IN discussing the question of power vs. hand-driven extractors, the editor of the *Review* thinks it is safe to estimate that the former will secure at least two ounces more of honey per Langstroth comb. To be on the conservative side, he figures that there will be a gain of one pound from a 10-frame super. If we get 40 pounds of honey from such super in a crop of 20,000 pounds of honey he estimates that we would save in power extraction over hand extraction 500 pounds. On this basis an engine will about pay for itself in one year. Cleaner extracting-combs makes less of actual loss, less of excitement, commotion and demoralization of an apiary. He considers that the honey left in the extracting-combs is practically a loss, so that whatever of it we can save is a clear gain.

THE NEW EDITION OF THE A B C AND X Y Z OF BEE CULTURE.

THIS will be ready for delivery to the public in about two weeks, or about the time that our next issue goes to press. As usual, it is larger than any previous edition, containing a great deal of new matter. A large number of new engravings have been

made especially for it. Many of these are in the nature of moving pictures; that is to say, they show the successive steps of various manipulations described.

The subjects that have received additions are as follows: Absconding Swarms; Bees and Fruit; Bees as a Nuisance; Comb Foundation; Comb Honey; Diseases of Bees; Entrances; Extracted Honey; Extractors; Exhibits of Honey; Feeding and Feeders; Frames, to Manipulate; Fruit-blossoms; Introducing; Laws Relating to Bees; Pollen; Queen-rearing; Robbing; Swarming; Wax and Wintering. The following subjects have been entirely re-written: Glucose; Honey; Honey Adulteration; Sugar; Nectar; Cane Sugar; Spring Management of Bees. The general subject of Bees as Pollinators, under the head of Fruit-blossoms and Pollen, has received especial attention.

As far as possible we have sought to have all technical articles written by specialists in their particular line. For example, every thing relating to the chemistry of honey has been written by Prof. Hugh Bryan, of the Bureau of Chemistry of the United States Department of Agriculture. Dr. E. F. Phillips, of the same Department, has prepared a number of articles on technical subjects; and R. E. Snodgrass, who has probably made the most extended study of the anatomy of the bee of any scientist in the world, living or dead, has prepared the article in the appendix on the anatomy of the bee.

Taking it all in all, we have endeavored to make this latest edition an accurate exponent of every thing relating to the subject. It is probably the largest work—that is, containing the most actual matter—of any of its kind in any language. We have spared neither pains nor expense in bringing it clear up to the times. The fact that it has always been, and is yet, in standing type, so that changes can be easily made, makes this possible.

HONEY-CROP CONDITIONS.

CONDITIONS for a good flow from clover in northern and eastern States have been very favorable. At one time it was feared that drouth might cut it short, but timely rains have been reported from different sections, and it would seem at this writing that there will be at least a fair yield of first quality clover honey, and probably some basswood, during this season.

Reports from some of the alfalfa districts have been somewhat conflicting. In some portions of the West there will be a good

crop; in other portions, a partial failure. Southern California is not going to give us the honey-flow that was first expected. It is too early yet to give an approximate idea of what the season is to be; but it is evident there will be a light or fair crop of white-clover honey in the Eastern States.

A FIFTY-THOUSAND-COLONY BEE COMPANY ORGANIZED FOR THE PRODUCTION OF HONEY.

THE following letter will explain itself:

Mr. Root.—The above company has been incorporated in the State of New York, and on July 15 will start their first apiary of 1000 colonies at Kingston, Jamaica, W. I. It is the intention of the company to increase to 50,000 colonies. The Board of Directors are: J. S. Charleson, New York, President; A. B. Peters, Brooklyn, N. Y., Secretary and Treasurer; W. C. Morris, Yonkers, N. Y., Theodore Hess, Paterson, N. J., and Herman Neubert, Brooklyn, N. Y. The field work will be under the personal direction of W. C. Morris, the Yonkers bee-keeper. A large bottling-plant will be established in New York, and the product sold direct to the grocery trade. Agencies have been established in England and Germany. Any other information will be furnished by A. B. PETERS, Sec.

We wish the new company success. It is to be presumed, of course, that they will have experts, familiar with the localities, where they propose starting their yards, otherwise the venture would prove to be a failure. The experience in the past, however, has been that these large bee companies have not been successful. What the history of this will be remains to be seen.

A GOOD SCHEME FOR CROP REPORTS.

THE bee-keepers of Imperial Valley, California, are sending out blanks, "Crop and Market Report." The blanks are well gotten up, and the questions asked are pertinent and important. We hereby append a copy that will speak for itself. We would respectfully request that our readers in various portions of the country answer these questions by number on a postal card. Don't, for pity's sake, write any thing but answers to these questions, and each answer must not be longer than two or three words. When the reports come in by the thousand it is impossible to summarize them unless they are very brief.

1. Condition of bees?
2. Climatic conditions (favorable or not)?
3. Are bee-men suffering from drouth or wet weather?
4. Prospects for honey crop?
5. Compare prospects with last year, same date.
6. Percentage of full crop harvested to date?
7. Compare yield with last year, same date.
8. Kind of honey produced in your locality, comb or extracted?
9. Color of honey produced this year?
10. Price local dealers are paying for honey?
11. Price bee-men are holding for?
12. Is the crop moving readily?

THE PROGRESS OF MODERN METHODS OF EXTRACTING HONEY.

DURING the last few years a number of different honey-strainers have been devised, all of which are quite different from the usual form of strainer consisting of a large

square of cheese-cloth tied over the top of a can or tank. That so many are trying to improve on the cheese-cloth strainer is conclusive evidence, we think, that the old forms of strainers, in spite of the fact that they are so widely used, must give place sooner or later to a cheaper, quicker, and more convenient method of straining. Some time ago mention was made of gravity strainers, and a number of extensive producers have been trying them. Among these should be mentioned Mr. E. D. Townsend, one of the best authorities on extracting honey who is now writing a series of articles for the *Bee-keepers' Review*. Mr. Townsend is not a bee-keeper of the mere hundred-colony caliber, for he has a number of out-apiaries; and any tool or appliance that he uses must be capable of handling honey on a large scale. In the May issue of the *Review* Mr. Townsend describes and illustrates the implements which he uses in his honey-house, and we are glad to furnish our readers with a summary of his article.

HOW MR. TOWNSEND CLARIFIES HONEY RAPIDLY WITHOUT A STRAINER.

The illustration, p. 413, shows Mr. Townsend's very simple clarifier, which is nothing more nor less than a round tank, 22 inches in diameter and 32 inches deep, with a 1½-inch Scoville honey-gate at the bottom. The main feature of the tank is a separating float, which is a disc made of ⅝-inch board, 21 inches in diameter. At intervals of a few inches on the circumference, staples are given, projecting ¾ of an inch, these staples acting as spacers to keep the float in the center of the tank, thus providing a ¾-inch crack, so to speak, entirely around the side of the tank. When honey is poured into a tank the force of the fall is likely to drive the cappings, etc., down toward the bottom of the tank; but this float breaks the fall and allows only the honey to find its way past the float down and out of the gate at the bottom. Mr. Townsend says that, when he uses this separator or clarifier, the honey is freer from fine particles than any that he has ever been able to get when using a cheese-cloth strainer.

The method of using the separator is best given in Mr. Townsend's own words, as follows:

With the separating float (previously described) in place, the tank is filled full of honey as it comes from the extractor. When pouring in the first two or three pails of honey from the extractor some particles of comb and impurities will go into the gate; so, draw out half a pail or so, or until the honey appears clear, before beginning to can. * * *

Only one or two cans of honey are drawn at a time, when the tank is again filled full. Handled in this way, with a 32-inch-deep tank and our separating float, honey is more free from particles of comb and impurities than when strained through cheese-cloth in the usual way.

The separating feature seems to work automatically, for the faster it is worked the warmer is the honey (animal heat), and the more rapid the separating of the impurities; consequently, the capacity is unlimited; or, at any rate, it will handle all the honey that can be extracted with a four-frame extractor, and do the work well.

Each night when through extracting, when the separating-tank is still full of honey; remove the

separating-float and skim the honey in the tank, and can it up, or the portion that is clear. Stop drawing when the scum begins to run through the gate; and what is left at the bottom of the tank goes with the next day's extracting.

The tank *must* be empty of cold honey when commencing the day's extracting, or the system will be a failure.

THE M'INTYRE UNCAPPING-TANK.

As will be seen by the illustration, Mr. Townsend now uses the long form of uncapping-box instead of the cracker-barrel containers that he formerly used. A comb-rack on the top of the tank furnishes a support for holding either the capped or uncapped combs, so that all drip is saved and general mussiness done away with.

Near the bottom of the tank is a slatted bottom to support the cappings. The honey which drains through runs into the 2½-inch space under the rack, and from thence out of the gate at the end of the tank. Mr. Townsend names, among the advantages of this large uncapping-tank, the greater capacity, larger drainage surface, and the general convenience, on account of there being no necessity for frequent lifting of heavy capping, changing of barrels, etc.

BEE-STINGS FOR RHEUMATISM.

DR. A. F. BONNEY, of Buck Grove, Iowa, has stood almost alone in his contention that bee-stings will not cure rheumatism. The reports have been very numerous of cases that have been relieved, if not cured, and we can not but believe that, for certain kinds of rheumatism, the stings most certainly prove beneficial. The article by one who signed himself "A Country Doctor," page 323, May 15, was written, as we happen to know, by a very prominent physician in Michigan, and one who has had a great deal of experience with different forms of rheumatism. His opinions, therefore, deserve careful thought.

In the March issue of the *American Bee Journal*, Wm. Stolley relates a most remarkable incident along this line.

A gentleman by the name of Geo. Loan, at that time the street commissioner of Grand Island, and still among the living, was suffering terribly from inflammatory rheumatism, at about 70 years of age.

For about 8 months Mr. Loan was confined most of the time, and several of our learned doctors were pumping medicines into the sufferer, and kept his legs well greased with their useless liniments; but in spite of all the doctors were able to do for him, the ailment got worse and worse. The children of Mr. Loan had heard of the "Stolley bee-sting cure," and they insisted on his giving the bee-stings a fair trial.

At last Mr. L., to please his children, consented to be taken to my farm. He was utterly unable to walk, and had to be lifted out of his carriage. The rheumatism had settled in one knee. The swelling was simply fearful, and the pain, as Mr. L. said, was terrible. He told me he had not the least faith in the bee-sting cure. I told him that *that* would make no difference as to the effectiveness of stings, and that he would not be a cent out of pocket in trying it. So I gave my patient, to begin with, 7 stings on his sore knee, and told him to call again a week later.

The next Sunday Mr. Loan was brought down to the farm again. He got out of his vehicle without help, and said, "Mr. Stolley, I begin to believe in your bee-stinging; the pain in my knee was almost gone before I got back to town (1½ miles), and, you see, my swollen knee is shrinking somewhat."

That day Mr. L. received 9 stings, and it was agreed upon that he should come again the next Sunday, when he was on hand promptly; he got out of his carriage, and walked almost without limping and said, "Your bee-stings have done wonders; why, now I want a whole lot of bee-stings." I objected to his request, but agreed that I would give him 15 stings. As it happened he received but 13 stings, while 2 went into my own fingers.

Mr. L. was under orders to call again the Sunday following. During the week I did not hear how he was getting along, but went to town on Saturday, the day before he was to come out again to my farm. The physicians in the city, of course, heard of what was going on with Mr. Loan, and watched the case closely. So, when I got to town on that Saturday, one of the doctors, who had been dosing Mr. L. with medicine, and kept his legs greased, for 8 months, approached me thus: "Say, Stolley, have you heard of Loan?"

I answered, "No, I have heard nothing about him for a week."

"Why, Loan is dying; he has an awful fever. Look here, Stolley, if L. dies you can be held responsible for it. You have no right to practice medicine."

Now, while this conversation took place I noticed Mr. Loan coming, walking as though nothing ailed him, along the street toward us, but the doctor could not see him, for the simple reason that he had no eyes behind, and talked right on.

So I knew my Mr. Loan was all right, and not dying, and I told the "learned" doctor that I always should insist that I had the constitutional right, in this free country, to give to sick people bee-stings, if they were in need of them, and asked me to apply them, in particular since I was not charging any thing for stings, time, and trouble.

Meanwhile Mr. Loan had come up, right to where I talked with the doctor, who, being blind behind, was not aware of his presence.

At this juncture I lifted my hat, and, gravely addressing the doctor, I said, "My dear colleague, Dr. E., I have the pleasure of introducing to you my patient, Mr. Loan;" and turning to Mr. L., "Please tell the doctor what bee-stings have done for you." And he did tell the doctor:

"Why, doctor," Mr. L. said, "look here"—(and he threw out his former sore leg, and shook it to demonstrate how nice and limber it was after the three weeks of bee-sting cure—"for eight months you doctors kept me most of the time in bed, and in pain; you have filled my stomach with medicine and almost ruined it; you have taken \$200 out of my pocket for thus treating me, and only made my sick leg worse. *You are no doctors at all.* If you want to learn something about the cure of rheumatism, why, go down to Stolley's farm, where you can learn all about it."

I should like to tell my experience in bee-stings for rheumatism. Two years ago a young man came home from the rare atmosphere in New Mexico, where he was working, to die at his home here with rheumatism. He had been given up by the doctors, who told him he would die if he stayed there. I met him on the streets of our city. His muscles twitched continually like one who had St. Vitus' dance. I asked him to come home with me and work for me. The neighbors laughed, and told me he could not do any thing. I assured the young man that I had hired him in order to cure him. He said he was willing to take medicine, no matter how severe. Well, I began the first day with one sting, which caused no effect whatever, more than if he had been an old bee-keeper. In less than a week I was putting three stings on his wrist over the pulse and leaving them there. In a short time, not more than two weeks, his rheumatism had mostly all gone. But the bee-stings began to hurt. They would swell very badly. I tried to get him to keep right on until he was immune. In one month he left me, to go back to New Mexico to get his forty dollars a month. He said, "I can now cure myself there if it ever comes back."

I have cured myself of awful rheumatism twice in a few years by this treatment. I do not suppose it will cure *all* rheumatism; but if it cures some it will pay to try it on any case. I doubt if there is any old bee-keeper who has rheumatism when working on his bees; but I think it will come bark to them if they stop bee-work.

Marceline, Mo., May 19.

IRVING LONG,

Stray Straws

By DR. C. C. MILLER, Marengo, Ill.

DR. PHILLIPS made a delightful call on me the other day. The air about him is blue with all kinds of foul brood.

WITH HALLEY'S comet out of the way and Roosevelt back home, may be we shall now have some decent weather for bees.

STINKING and non-stinking foul brood are the two kinds in Germany, and I supposed, page 371, that "stinking" was the American variety, judging by the smell; but Dr. Phillips tells me it's just the other way; "stinking" is European, and "non-stinking" is American!

LAYING WORKERS in my apiary are charged to a little sprinkling of Holy Lands and Cyprians, p. 371. No Holy Land was ever here, and just one Cyprian queen, and no queens were reared from her. My bees range from pure Italian to dark hybrids, the yellow blood predominating.

HONEY wintered at 75 to 90 degrees is not an entire success; p. 278; combs sagged, and honey cooked a little. Plainly too hot. Two winters' experience has shown that sections beside the furnace in the cellar have wintered—I think I may say perfectly. I don't know the temperature, but should guess 45 to 75°.

Nov. 15 I questioned whether one American bee-keeper in five or ten allowed no queen to enter her second winter. Rev. Mr. Burghardt, *Leipz. Bztg.*, 63, says Frank Benton was his authority for the statement there made. Possibly Mr. Benton was misquoted. Possibly I am mistaken. What is the truth about it, anyhow?

THAT viciously vulgar violation of good English, using "shook swarms" instead of "shaken swarms," is having its legitimate result in causing bad English elsewhere. Editor Hutchinson, a man civilized enough to eat with a knife and fork instead of his fingers, says, *Review*, 185, "Bees that have been shook from a comb."

NATIONAL BISCUIT Co. uses 3,600,000 lbs. of honey (125 carloads) annually. Had on hand March 26, 2,000,000 lbs. Even the best honey-dew is inferior for their use, light amber honeys seeming to retain flavors best. Wherever they use the word "honey" in naming their goods, as "honey wafers," not a particle of sugar is used, honey only.—*Am. Bee Journal*, 151.

R. F. HOLTERMANN, page 339, I wish you and Doolittle would settle the question whether a colony can be *too* strong May 1. I'm ready to follow the best pleader. But you'll hardly get Doolittle to exchange you his more-than-six-space colonies for six-spacers. He can do better to equalize in his own yards. At least that's the way here. Like you, I never have more bees than I want.

SAY, YOU, New Mexico Chap, page 296, if you have noticed that a $\frac{7}{8}$ entrance gives less surplus than a $\frac{3}{4}$ one, I believe your noticer is out of order. You say the swarming impulse is incited by the bees filling their hive. Isn't it also incited by their being too hot? If you've noted that ventilation retards egg production, I believe your noter needs repairing too. My queens fill out the combs with eggs clear down to that two-inch entrance just as much as they ever did with $\frac{3}{8}$ entrances.

FIRST CLOVER-BLOOM May 18 meant storing May 28, according to all previous rules. But cold weather prevented; and although clover was abundant, colonies were at the point of starvation June 8. Then came real June weather, and the delightful roar of bees storing, and June 13 some supers had honey in every section but the four corner ones. [We never saw a better clover flow than we are having right here at Medina at the present time; but it takes nearly until noon before it begins to yield nectar.—Ed.]

A. I. ROOT, I don't wonder that you shudder at the thought of chopping off men's heads to stop poppy-growing or to stop drunkard-making, p. 394. No; I don't want to see saloon-keepers' heads taken off. Still, it might be a saving in the long run. Suppose each saloon-keeper makes only two drunkards. Which would be better, to send the one saloon-keeper unprepared into eternity, or the two drunkards? But there's a better way out. Let every good man refuse to vote for a candidate for the legislature unless that candidate is openly pledged to use his who'e power against the saloon. Just so long as good men are held in such party bondage that they will vote for *any* candidate the machine names, just so long will the saloon remain in the saddle.

M. T. PRITCHARD, have you any *proof* that a queen-cell in a small cluster of bees will be better cared for than if it were caged in a strong colony? p. 389. I don't want to believe it if I can help it, for it's handier to have a lot of virgins in a nursery. But I must confess that too many virgins die in said nursery, even in the strongest colony; and if some die for want of right care, it's a question whether any get the best care; and if we are to have the best grown-ups they should have the best care when babies. German authorities, including the great Swiss authority, Dr. Kramer, insist that it is not merely a question of so much heat; that the nurses have an influence by their intimate contact with the cells; and that the loving care lavished upon the young virgin from the moment of her emergence makes no small difference in what she will accomplish in after-life. A public establishment with a hundred babies in it may have a corps of the best nurses and physicians; but there is lacking the warm, loving atmosphere that envelops the one baby in its own home. But, hold on; I'm not going to fight your battles, M. T. Bring on your proof if you have any.



Bee-keeping in Southern California

BY MRS. H. G. ACKLIN, GLENDORA, CAL.

Pure orange-blossom honey is certainly very fine—probably a trifle stronger than pure sage, but delicious, nevertheless.

It is amusing to see "bait hives" suspended from limbs of trees waiting for run-away swarms. Many apiaries are increased considerably during the season by this method.

Reports from Saugus and vicinity are to the effect that the hot winds have dried up the sages to such an extent that a crop of light honey is out of the question in that locality.

Orange honey, when not well ripened, makes a very good explosive, I understand. At least those unsuspecting freight men must have thought bombardment was indeed the order of the day, and night too, when those two carloads of tin cans, filled with unripe orange honey, commenced to explode. One can scarcely imagine honey rising so rapidly, for only the roof of the freight-house kept it from going sky-high. Every one immediately connected with the affair must have felt considerably "stuck up" for a long time. *Moral.*—Do not can unripe honey.

Who will be the first to locate an apiary on the new mountain road leading from Glendora to the fork of the San Gabriel River? This road passes fashionable mountain resorts, and will be traveled constantly by people from all stations in life, many of whom will buy honey if it be put up in attractive packages. A honey-store should be placed by the roadside so no alighting will have to be done by the purchaser. The apiary should be stationed in a side canyon in full view of the main road. It can be made a paying investment if properly handled.

Our beloved State must, sure enough, have a queer atmosphere. Bee-keepers say it matters little about the rainfall, whether heavy or light; if only the atmospheric conditions are all right a good crop of honey is almost a certainty. After a fine rain some one ventures to remark that the outlook is good for a honey crop; but the bee-keeper shakes his head dolefully and commences to talk about the conditions of the atmosphere. It makes one feel creepy. Why should California atmosphere be so very different from any other atmosphere? We surely have not a set of atmospheric magicians who can fix up the ozone to suit themselves.

When a bee-keeper comes to the conclusion that he is going to put his bees where he likes, regardless of the wishes and rights of others in the same business, he sometimes "slips up" in his calculations. One story is something on this wise. Persuasion and threats were used without avail, and the individual located where he chose. All went well as long as he remained at home; but provisions gave out, and the larder must be replenished; and during his absence his apiary was "shot-up." Honey-tanks, bee-hives, honey-house, tent—in fact, every thing was riddled with bullets. It is needless to say this last persuasion worked. The same kind of strenuousness was exhibited in another case, fire taking the place of bullets.

Mr. Geo. N. Salsbury, of Sierra Madre, is now, May 7, moving the last of his bees over to the San Fernando Valley district and locating them at three different points. He found that his apiary of 450 to 500 colonies, combined with other apiaries in the same locality, was overstocking the district around Sierra Madre. The surplus honey was extracted before moving. It is a tremendous undertaking to move such an apiary and fixtures from 35 to 44 miles by wagon, and much of the way up grade. The moving was all done in the day time—that is, the loads were started in the morning, without the loss of a colony. Three horses were used, and fifty colonies taken at each load. Mr. Salsbury claims the forage is good where he is now located, and expects a good crop of honey from the sages. The sages in many places are not yielding, but this particular locality may be an exception.

Sierra Madre appears to be a very good location for a limited number of colonies of bees. Its nearness to the mountains (for it is almost in the foot-hills) gives it the double advantage of forage from both mountain and valley. There are orange-groves and grape-vineyards in the valleys, while the foot-hills are covered with many varieties of blooming wild flowers at the present writing, May 10, including black and white sage and wild alfalfa. The white sage is not yet in full bloom; but I understand that that particular variety seldom yields nectar any way. Mr. A. Ringele has an apiary of 130 colonies located in this favored spot. He has a magnificent view of Mt. Wilson while at work, as also the valleys sweeping to the south. The larger part of his bees are in eight-frame hives run for comb honey, each of which now has two supers well filled, mostly from orange-blossoms. Forty colonies are in ten-frame hives with two extracting-supers each, all of which are well filled. This, with the later flow, if that flow materializes, will make a very good showing.

Bee-keeping Among The Rockies

By WESLEY FOSTER, Boulder, Colo.

FROSTED ALFALFA.

Late frosts, several of them after the middle of May, froze back the alfalfa so the first growth is not as heavy or vigorous as it should be. The setback will hardly be overcome till second growth; and if the grasshoppers take that we shall be in hard lines for sure. Sweet clover was not hurt much, and the growth this year is heavy and abundant along all the ditch-banks and waste-places.

BEES WORKING ON ROSES.

I have not seen bees gathering pollen from roses, nor have I seen them tear open the buds of roses; but this morning half a dozen honey-bees were wedging their heads away down among the petals of a rose growing in our yard. It is one of the large double variety, somewhat variegated, in color of petals ranging from a pink to dark red. Those bees certainly were not after pollen, for the way they stretched out their tongues made it plain that nectar was their quest.

STRENGTHENING WEAK COLONIES.

The past winter was pretty severe on many hives that, under ordinary conditions, would come through in good strong shape. Quite a few of these have vigorous queens, but are so weak in bees that there is small chance for them to build up for work this year. By changing places with a strong colony the weak one gets a large force of bees so they can do good work. So far we have had little trouble from the bees fighting or killing the queens. As long as the plan works we shall continue, but are not yet ready to give it unqualified endorsement.

FEEDING SYRUP IN COMBS.

Of all the feeders described and manufactured, nothing works better than feeding sugar syrup in the empty combs in the hive as Mr. Doolittle tells of in the June 1st number of GLEANINGS. We use almost the same method as he tells of, except that we have several dry combs under the one being filled, which catch most of the syrup that does not get into the cells of the comb. The combs all lie in a tin-lined vat, so no syrup is lost. In half an hour we have filled seventy combs and placed them in the hives, no robbing being started nor the bees scarcely disturbed.

HONEY PROSPECTS FOR 1910.

To-day, June 11, the bees are getting scarcely enough honey from the alfalfa to keep up brood-rearing, and we are doing considerable feeding in several yards. White clover is in bloom, but there is never

enough of it to affect the flow very much. The weather has been too cool for satisfactory honey-gathering, and we are anxiously looking for a change to warm days and nights.

Grasshoppers are very thick this year; and unless some storms destroy them, or a disease sweeps them off, we are going to have little alfalfa bloom, after the first cutting, for the bees to work on. The grasshoppers now are about the size of a pea or bean; but they grow fast, and eat more as they grow in size. We will not give up hope till there are no grounds for hope left.

LAYING WORKERS.

Mr. Allen Latham is certainly right about the laying worker being a "a rare bird" in the apiary, though bee-keepers, no doubt, give them credit for the trouble when an undersized queen is the cause. But I have been more fortunate, if the presence of laying workers in a hive is fortunate, for I have seen as many as half a dozen laying workers at the operation of depositing eggs in cells on one side of a single comb. The operation seemed much more difficult than for any full-sized queen I ever saw laying an egg; for the laying worker, being so much shorter, could hardly back into the cells far enough to deposit her eggs at the base. The way their wings would spread out when trying to reach the bottom of the cell was amusing. After watching this number of laying workers as long as I did, there is no doubt in my mind that they were all genuine laying workers. It is the only case I have ever seen where the culprits were at work, though there have been cases when laying workers were supposed to be the cause when a poor queen may have been at fault. I am glad Mr. Latham brought up this question, for now I shall be more careful in finding the real cause.

THE BEE-KEEPER.

The editor speaks in the June 1st issue of his need of material dealing with the fundamentals of our business. The man, the location, the hive, the queen, and the market are the main fundamentals; but little has been said in the journals about the qualities necessary for a successful bee-keeper. The man is the most fundamental of all these mentioned. Energy, system, and willingness to adopt new ideas are characteristics I have noticed in the most successful bee-men. The progressive bee-keeper now knows what his market demands, and will pay him the best profit, and he has a system of work that accomplishes the most for the least effort. Every really progressive man I know in the business reads one or several journals, and up to certain limits is experimenting with some new appliance or idea that has as its aim the saving of time and effort. Some are succeeding with intensive methods while the larger majority do better with extensive methods.

Notes from Canada

By R. F. HOLTERMANN

Mention was made of a foul-brood inspector advising bee-keepers by letter not to allow dead stocks to be robbed out in the spring. D. Chalmers claims credit, and the writer hereby apologizes for the slip of memory.



THE PREVENTION OF SWARMING.

Last year I did not break up a single brood-chamber, nor remove combs of brood to prevent swarming. I have become more and more opposed to disturbing the order of combs in the brood-chamber.



THE INTRODUCTION OF QUEENS.

It required a good deal of courage for the writer of these notes to introduce a nine-dollar breeding queen by the method given, p. 313 (starving the queen for three quarters of an hour) yet I made my first plunge. A platform was laid in front of the hive upon which I would be able to detect readily the expelled dead queen. The experiment proved entirely successful.



At this date, June 10, I have fed this week to some 400 colonies about 1400 lbs. of sugar syrup; last week about 1700 lbs. of the same, and previous to that about 2000 lbs. There were not ten per cent of the colonies which did not require feeding. How is that for a spring? My bees, however, are in better condition than last year, and on June 9 were gathering clover nectar very freely. Let us hope the corner has been turned.



SWARMING CONTROLLED BY REMOVING BROOD.

Sometimes the cure is worse than the disease; and in my estimation, during a heavy flow it is inexpedient to remove much brood from the brood-chamber. The life history of the colony is so regulated that brood is reared whenever the older bees are wearing themselves out; to destroy brood coming on is to give the economy of the hive a rude jolt, and is a great and injurious waste.



SWARMING IN THE WEST.

I do not find the bees are as much inclined to swarm during a rapid flow as during a light flow, page 282, May 1. Again, with a steady flow there is less tendency to swarming than when the flow is broken; and during the days the bees "loaf" in the hive the hive is crowded with bees. I quite agree with Mr. Foster when he writes, "cold nights act as a sort of damper to the warmth of the swarming fever." In my estimation, in any locality the critical time is when a

honey-flow begins, by means of which the bees store some surplus honey, and from that time until the bees get to working well in the super; then, again, when the supers become crowded.



FOUL-BROOD LEGISLATION.

How is it that the foul-brood question has stirred up so much bitterness in so many lands? In some cases the odor of the correspondence has been almost as unsavory as that of the disease itself. The *British Bee Journal* has for some time had pages of such correspondence. One side is in favor of foul-brood legislation, while the other is opposed to legislation for the suppression of the disease. A bee-keeper in Canada opposed to foul-brood legislation would be a curiosity. I know of none.



THE SIZE OF FRAME.

When Editor Root advises deepening the Langstroth frame and using the ten-frame Langstroth bottom-boards, covers, queen-excluders, and supers, thus securing the capacity of a twelve-frame Langstroth hive, let me say I believe such a frame a better one than the Langstroth, and there is so much can be said in favor of the plan that I would not raise a word of objection. In Canada, however, the ten-frame Langstroth has not been used very much, and therefore that condition does not exist to any extent. A ten-frame Langstroth brood-chamber could be converted into a hive such as Editor Root suggests by nailing a strip all around to the lower edge of the brood-chamber. The brood-combs can be placed in the super, deeper frames substituted, and thus nothing lost.



SCIENTIFIC OR PRACTICAL.

In the annual report of the Ontario Beekeepers' Association, p. 60, Mr. P. W. Hodgetts, secretary of said association, and officer in the Ontario Department of Agriculture, states, "In regard to the scientific or practical side of the work, our college at Guelph has to be practical; at the same time they are doing very good scientific work, and there is no doubt that Mr. Pettit can follow such lines, and we can get good results from both. We have endeavored to make all the experimental work at the College practical, so that our bee-keepers, or men in other lines, can go there and see what is being done and can be done on the farm. Mr. Pettit has a tremendous field for working along scientific lines, and I am hoping he will be able to combine the two." May scientific research not be eminently practical? To sit down and figure the length of the third side of a right-angled triangle, after having been given the length of the two sides of the right-angled triangle is scientific; but to mark out such a triangle and measure the third side to get its length would, in the eyes of many, be more practical; but—is it?

Conversations with Doolittle

At Borodino

EXTRACTED VERSUS COMB HONEY.

"Which is the more profitable to produce—extracted or comb honey?"

"That is a question which probably will never be settled to the satisfaction of all, because of the different opinions of different individuals. One man will declare that he can produce three times as much extracted as comb honey, while another will be equally sure that he can secure nearly if not fully as much section honey as extracted. As a rule, both will say, when questioned, that the other does not know how to produce the one kind to the best advantage; and both may be practical honey-producers, and prove the excellence of their methods by producing large crops of the kind they are interested in. Probably the truth lies somewhere between the two extremes. A great deal, undoubtedly, lies in the locality, or, properly speaking, the environment. Very much depends on the character of the honey-flow, and fully as much on the method and the man. The *man* has very much to do with this matter, but in all probability the character of the honey-flow has more. There are great differences as regards the secretion of nectar. With only a light flow, especially when in connection with cool weather, bees will store honey in empty combs when they will do little or nothing by way of drawing out foundation in sections or building comb therein. If the nectar-flow increases and the weather gets hot, the difference grows less and less until at a certain point. I think the best methods will secure at least three-fourths as much section honey as extracted."

"Then you think that, under any condition, more extracted honey can be produced than section honey; and why, then, is not extracted honey the better?"

"If only for family use, it probably would be; but when it comes to producing honey for market, the average price of section honey is nearly double that of extracted. Of course, dark section honey sells for less than white; but the dark extracted sells proportionally less than white extracted, or very nearly so."

"Do you think that the *average* locality will give only one-fourth more extracted than section honey?"

"The generally accepted proportion of twice as much extracted as section is probably more nearly correct. However, if the extracted is so well ripened that it will weigh fully twelve pounds to the gallon, the three-fourths estimate will not be very far out of the way."

"But a man can care for a given number of colonies when worked for extracted honey more easily than he can for section, can he not?"

"Probably the advantage would be with those run for extracted. Certainly this would be the case during years past; but with our present light regarding the swarming proposition there would not be so much difference. Till a few years ago the trouble in working for comb honey, especially in out-apiaries, was the swarming. When working for extracted, with proper management scarcely a swarm will issue. But now, with a little extra manipulation, swarming is brought to a minimum, if not entirely done away with."

"But this manipulation is saved when working for extracted honey, so we can score one there. But how is it about the marketing?"

"That depends. If it is to be shipped far away to a distant city to be sold on commission or otherwise, the extracted honey would have the advantage, as this does not require the cleaning of sections nor the careful grading which is required with comb honey. Then where the extracted is sold in barrels the cost is less than for crates, and the danger from breakage is practically nothing, while there is considerable risk with the section honey."

"But suppose we sell it at home, and in small packages."

"If put into small packages and sold at retail, the labor and expense of packages bring the price nearly up to that of section honey, as such can be sold in the home market without any expense for packages, which is not so easy for extracted. If one is in a neighborhood where people will pay nearly if not quite as much for extracted, then the extracted honey would be the kind to produce."

"What would be your advice as to which would be better for me?"

"That, I think, is a question each one must decide for himself. If I were to answer this last question from my own standpoint I should say produce section honey, as I have produced very little extracted honey during the past twenty years. But there are many places where only a definite amount of honey will be used in any event, and in such a place you can sell just as many pounds of comb honey as you can of extracted. You will note that, when producing extracted honey at the rate of two pounds to one of comb, and selling it at half as much a pound, according to general quotations, you must sell twice as many pounds to receive the same returns."

QUEENS DO NOT PIPE WITH THEIR WINGS.

On page 297, May 1, F. Dundas Todd speaks of the sound of a virgin in the first part of April. I took three frames of brood from a hive of Italians to make some increase. On April 23, on looking over the new hive I heard the sound of a virgin, and, on turning the frame, I saw the queen. She would run about two inches and then pipe, working her head up and down, but her wings were not moving.

Lexington, Ky., May 7.

ROBERT CHARTERS.

[As to how this piping is done is a mooted question. That the wings probably do not make the noise is possibly true. That they do not vibrate when that noise is made is not always true.—ED.]

General Correspondence

THE EFFECT OF ODOR AND COLOR ON BEES.

How Insects have Altered the Flowers; Highly Flavored Honey Comes from the Strong-scented Flowers; Bees do Not Prefer any One Color, though they are Attracted More by Dark Shades.

BY PH. J. BALDENSBERGER.

Continued from last issue.

When at Jaffa, in Palestine, I clearly remarked the effect of odor as well as of colors on bees. The immense orange-gardens are grouped about the old town in a great semicircle, with the base at the sea. Arriving by sea in the months of March and April, all the air for miles is filled with the orange-blossom perfume, and, as a matter of course, also toward the land. Now, the bees of large apiaries situated in a village about three miles north of Jaffa visited regularly the gardens. They used to stream in as a river of bees overhead on calm days, higher in the air, and on windy days almost sweeping the surface to and from their apiaries in search of honey.

We all know that a bee rarely if ever gathers honey or pollen from flowers of different odors or colors on the same trip, and often they do not mix the pollens of different colors in the same cell. Is the sense of art so much developed, or is it simply because the odor of the one flower visited is so strong as to surround the worker altogether and carry her, so to speak, in a perfumed cloud from one flower of the same species to the other in order to have the aim accomplished for which odors and colors were set forth—that is to say, fertilization? Nature has lavished its agents by placing hundreds or thousands where only one or two are wanted; thus for one drone necessary, thousands fill the air; and as for pollen, thousands of insects carry it away from flowers for their own private use, leaving an infinitely small part, as they pass, in the flower expected to be in need of it.

Colors vary in the flowers, in the pollen, and in the honey; and light-colored flowers may give dark honey or light-colored honey, just as the season is dry or wet, or other atmospherical influences prevail. So the honey is sometimes granulated in the comb, and sometimes it may be very thin for some time after extracting. Here in the South we more often have thick honey, and, as a rule, highly flavored, because most honey-plants are of the highly scented kind.

As above stated, when the bees are in search of honey they are guided by odor; but when in search of a home or on the way to their hives, in large apiaries, they depend on their senses of sight. Probably they depend more on the colors of their hives than

on the shape or surroundings. Sir J. Lubbock supposes that bees prefer one color to another, and gives experience. M. Maeterlinck, too, says that his bees preferred on one occasion blue when he painted a number of hives; thus, some rose color, others yellow, and others blue. He says the swarms chose the blue ones.

For the last twenty-five years or more I have always painted my hives three different colors, and, though sometimes I have hundreds of them, I could not see that the bees showed any preference.

When there are many hives in one flat piece of country it is very useful to have them of many colors, as it is easier for the workers and the returning queens to strike their own hives without difficulty. On one occasion I had to work with about 400 hives in one square flat field. The hives were placed in rows of three different colors alternately. The bees flew out and in without hesitation. One day one of the blue rows had to be replaced by white hives. The next white row was the third one behind, the distance from row to row being about 10 feet. On returning, the bees of the third row (the white one) alighted on the first which was blue and had become white. Evidently they had noticed the blue row before, and knew that theirs was white; and, not finding a blue one, but one of their own color, they settled there, quite confident that it was their own. Encouraged (or, rather, puzzled) by this novel experience (this was more than twenty years ago), the white row was replaced by a blue one, and right away the bees went over to the third line behind their former row. This test proved to me that bees not only fix certain points in their memory, but that the color notion was peculiar to them. I can not find a preference for blue any more than for white.

Here in the Alps my apiaries are far apart, and all in rugged mountain regions. So far as this goes I lament sometimes, not as the Israelites of old, "after the flesh-pots of Egypt," but after the flowery and splendid "plains of Sharon," where I could spread my apiaries in symmetry. They are now in a line, now in ups and downs, and colors are no longer any object to the bees; yet I keep on painting the hives in different colors, not for any particular object, as I did years ago, to break the monotony and fly the national colors—red, white, and blue, even on the hives. Now I often have empty hives containing built comb. In spring these hives are often reoccupied by amateur or vagabond swarms. I had in one apiary four red hives and several blue ones; now, the four red hives were filled first, spontaneously, and the blue were chosen when there were no others. In another apiary, two white and two blue ones were filled alternately by swarms. Again, in a third apiary two hives, one blue and one white, received the visit of swarms at the same time. Finally, in another apiary with two blue and two white empty hives, the two blue

ones were preferred first. Of all this, the only possible conclusion is that bees have no preference whatever for color in hives, at least, and are more guided by odor than by color of flowers.

Our experience shows us that light-colored hives absorb less heat than dark ones; and they radiate less; but does the bee know this? Most likely it does not; and when a place to lodge the swarm in seems convenient to the scouts before the arrival of the swarm they adopt it without reflecting on the outward color. Runaway swarms sometimes build their comb in the open air along the branch of a tree or against a rock; but more often they choose the hollow stems of olive-trees, dark and warm though they be.

Notwithstanding all I have said, bees do notice dark colors much more than light ones. Perhaps light colors are imperceptible to insect eyes. I can not explain the reason, but I can point to the fact that light colors do not attract their attention, while black colors or even dark ones fairly irritate them. As a rule, when at work in the apiary I wear a white helmet as used in Asia and Africa, and rarely do the bees fly at the hat; but sometimes I go among the bees with a black felt hat; and when they are uncovered they will attack the brim at once, sometimes in great numbers. I rarely put on a veil here in Europe; and the veil, if used, is white, for the same purpose as for the hat. If in full work I would pull off the white head; the bees will attack my hairy head; and perhaps should a bald-headed man try, under the same circumstances, he would be sting-proof, just as when I pull up my sleeves to the elbows when working, yet never receive a sting on the arms. Everybody knows how angry bees become when a dog or a horse comes near the hives. It is not only the disagreeable smell, but the hairy business they dislike.

When we first begin work in the apiary, and irritate the bees in some way or other, they will be furious for some time, and then calm down again; but they will often attack, without any visible reason. This refers to our European races. With the oriental races it is often the reverse. They will be quite calm to begin with, and stand human interference for some time without showing their bad humor; but when once their patience is exhausted, nothing will calm their anger; and if you have to continue work it is best to put on a very tight veil and even gloves; for in their vindictiveness they will find any loose part and penetrate toward the more perceptible parts of your person. In the East, when work pressed hard and we could not afford to do slow work and thus avoid irritating them, we had white working clothes, veils, and gloves; but now, when the gloves become soiled the bees will attack the dark parts, but will leave off the attack when these parts are whitened by chalk or any other whitening product. Clearly enough, the dark color irritates them, more especially when excited;

and they seem to ignore white, wherever it may be. Again, I have often known them to attack my eyes rather than any other exposed part of my face, simply because these are the dark corners in the human face. This is what I think of color and odor and their effect on bees.

Nice, France, Jan. 7, 1910.

ADVERTISING HONEY IN GROCERY PAPERS.

BY F. J. ROOT.

For several years the writer has had more or less correspondence with bee-keepers as to the advantages which might eventually accrue to the industry if a systematic, liberal—yet judicious—use were made of printers' ink for a few seasons. No sensible man denies the value of advertising *per se*; but the trouble is to get the bee-keepers *beyond the talking-point*. Advertising costs money. This is an elementary statement; and when it comes to raising the "cold, clammy cash" the fraternity has been backward about coming forward.

But think what might easily be accomplished—if I may be pardoned for switching off a moment from my main topic—if a very small fraction of one cent per pound were assessed and actually paid into an advertising fund. I am informed that probably 60,000,000 pounds of honey are raised every year in the United States. This is 30,000 tons; and one dollar per ton would give you a mighty good foundation, but it is only about half large enough.

Do not imagine that I am asserting this sum to be necessary for a campaign in the grocery papers. At the beginning I want to be plainly understood as not maintaining that advertising in the grocery papers *alone* will create any increase in the general consumption of honey, which is to be the great object of all our proposed advertising. The grocery-paper advertising must be subsidiary to advertising in the big magazines which reach millions of housewives; and I wish to emphasize the words *must be*. The advertising in the magazines is absolutely essential; and with such backing you can spend a little part of your fund to excellent advantage with the grocery papers.

Run over in your minds the retail grocers with whom you are personally acquainted. What sort of men are they? What sort of grocer would *you* be? If you read the grocery papers, what sort of advertisement would cause you to "stop, look, listen"? The average retailer is a pretty good sort of chap. He likes to be well thought of—being human—and he likes to have a reputation for selling good goods at a reasonable profit.

In urging the dealer to make a little extra effort with honey, and using the grocery papers as a tool to work with, you want to tell him that you are making a big campaign in advertising honey to the consumer through the media of the big magazines; that this is

bound to cause more call for the article from his store, and it is up to him to have a nice assortment of the goods.

Then tell him that honey affords a good living profit; that it is eatable every day in the year, and his sales will not stop in August or December, or "in months without an R."

The two points above mentioned can not be put in too strong language—*well advertised, salable goods.*

You all know that the live retailer exerts considerable influence with the housewife. If he will exhibit a nice box or bottle of honey, and *bear down* upon the point that it is the best table delicacy that money can buy, he will almost inevitably make a sale because his own exertions will have been preceded and helped by the advertising in the magazines. And the more money he can sell, the more money he can make, and this money is what he is after.

Lastly, the dealer's advertising should give him a little talk about the merits of honey something like the advertising to the consumer.

Then the retailer, knowing that honey is being widely advertised; that its sale is bound to increase by reason of this advertising which is going to be kept up; that its merit is universally recognized; and that it will pay him a living profit, will see the necessity of pushing the button. He can't afford *not* to hustle, for he will find his competitor making a specialty of the article he is neglecting.

There are grocery papers and grocery papers, and I have been reading them—good, bad, and indifferent ones—for 25 years. Were I to separate the sheep from the goats—and the teddy bears which are neither—there would be a small flock of the creatures whose pedigrees I have been rather familiar with. In these I would use a liberal space all the time, and in this space I would have reading matter which would be a heart-to-heart talk with *intelligent* dealers. I would have the matter changed often, and I would have some *nice* small illustrations of honey in its different forms and on different tables from prince to pauper. I would have the best location the paper would give me, and I would seek the friendliness of these journals in all legitimate ways.

The use of honey in this country, I believe, can be more than doubled. It is seldom seen on the city table, and one reason for this neglect arises from the fact that beekeepers in some respects are not like bees, because the latter *get busy*. Raise the money to pay for advertising, and in due time you will be able to emulate the Owl and the Pussy Cat who

"went to sea

In a beautiful pea-green boat.

They took some honey and plenty of money

Wrapped up in a five-pound note."

No one or two or three of you can afford the expense. You must form an association; and the membership—which ought to embrace all who are looking after their own

best interests—should be a *unit* in raising the money. It should be cheerfully given, and the utmost confidence should be extended to those having the matter in charge. Never was truer saying than "United, we stand; divided, we fall." *What are you going to do about it?*

Newark, N. J.

BEE-PARALYSIS.

More Information Wanted Concerning it.

BY J. O. SHEARMAN.

One of my neighbors, a noted bee-keeper of this place, says he recently received from Washington a voluminous report telling all about foul brood in all its stages; but it was of no use to him, as he was already familiar with it. What he is watching for is something definite in regard to bee-paralysis. He has been investigating a little on his own account, and has found that the Italians in his case are more subject to this disease than the others. Now, this seems to be directly opposed to the opinion of others who have reported. What is the true state of affairs?

My neighbor does not say that *all* Italians are more subject to paralysis, but that those were which he had after introducing queens from a certain locality.

GENERAL CONDITIONS OF DISEASE IN CALIFORNIA.

There is more or less foul brood scattered all over this part of California, and some pay no attention to it. I hear that one man who owned 1200 colonies in apiaries in three counties left some foul-broody frames and combs scattered about when he moved his outyard away from a point near here, and some of them were picked up by others and used. The inspector does not come very often, and so nothing was done about it.

HONEY PROSPECTS IN CALIFORNIA.

The weather was pretty dry in February and in part of March; but during the last of March we had two big rains that came slowly enough to soak in and not run off. The sage has started to grow, and both white and black are doing well. The orange is just now coming into bloom, and is set very full.

Pomona, Cal.

[Italians are probably no more subject to bee-paralysis than any other race; but it has been shown that this disease can be transmitted through a queen received from localities where that disease exists. What your neighbor reports is probably true. All colonies showing any trace of bee-paralysis in a queen-rearing yard should be promptly removed to an isolated location or destroyed. Since your report was written, later reports seem to show that the season in Southern California will probably not come up to expectations.—Ed.]

FOUL-BROOD SPORES MIXED WITH HONEY IN THE SAME CELLS.

Why are Blacks Immune to Paralysis When Italians are Not?

BY W. A. H. GILSTRAP.

On p. 146, March 1, E. M. Gibson asks if any one has seen honey and American foul brood scale in the same cell. Perhaps not; but it is there, however; or, to be more exact, let us say the spores and honey are mixed in the same cells. Six years ago I had a hard fight with the disease under unfavorable conditions. In my best yard, while uncapping honey, the knife would frequently cut through theropy stuff right in the sealed honey. Had it been left it would have changed to spores and still have been in the cells with the honey, although not noticeable. The honey was put into cans, and the next winter I ate some of it, and, although it had been so rank in the summer, no epicure could see, taste, or smell any thing wrong with it. Some of the honey was boiled five minutes under steam pressure after being diluted one-half, and fed to bees with the best of results; but it requires so much care that I can not recommend the average bee-keeper either to eat it or feed it back to bees. The combs spoken of above were melted and the wax sold. Some men would be almost sure to scatter foul brood when melting the combs.

Friend Gibson's experience is so different from mine that I am much surprised. While we both live in California, our conditions may be no more alike than Ohio and Germany. My bees did not hesitate to put honey into infected cells in strictly wholesale order.

Before I got entirely rid of the disease I made some experiments which would have been entirely out of the question at the first general attack. I do not know how many queens I caged from diseased colonies, and introduced in the usual manner to healthy stocks in the same yard, using ordinary shipping-cages; but in no case did I contaminate the healthy stocks by so doing. How could it do so? The utmost care was observed to have the feed healthy in the cage.

A very convenient way to cure foul brood is to transfer the diseased bees to healthy combs of honey in early winter, when no brood is being raised and the cure is complete. If honey is daubed on the hive while transferring, it is certainly not expensive to scorch the hive a little; but I doubt if it is often necessary. The honey, or nectar, which is usually thrown out, is fresh and healthy. Where bees are shaken into hives of starters I have never found disinfection necessary, even where considerable new honey was shaken into the hive; but we can not risk honey on the outside of the hive, as it *might* make trouble with other bees.

European foul brood is within 100 miles of me now, or nearly so. It may never get here, or it may reach me at any time; so to

be on the safe side I must Italianize every thing, so if it does reach us no great loss need be feared. Even if the Italians should be no more immune they are not a bad proposition any way. I have often wondered why Italians are more subject to paralysis than any other bees I ever saw, and yet so immune to European foul brood. Some deny this; but I never noticed paralysis where there was no Italian blood. The paralysis means no disastrous loss as compared with foul brood; but often a colony is weakened in an aggravating manner. Having tried so many strains of three-banded I doubt if any of them are immune to paralysis as are blacks, Cyprians, and Carniolans. I have never tried the goldens. Syrians (Holy Lands) are too cross to be considered, while pure Carniolans swarm too much to be considered for outyards. Carno-Italians are a splendid bee; but I fear black brood, if it appears, would mean speedy disaster with them. In other localities these conditions would probably be different.

Ceres, Cal., May 5.

Queens Laying in Old Cell Cups; do Bees Move Eggs in a Colony where there is a Queen?

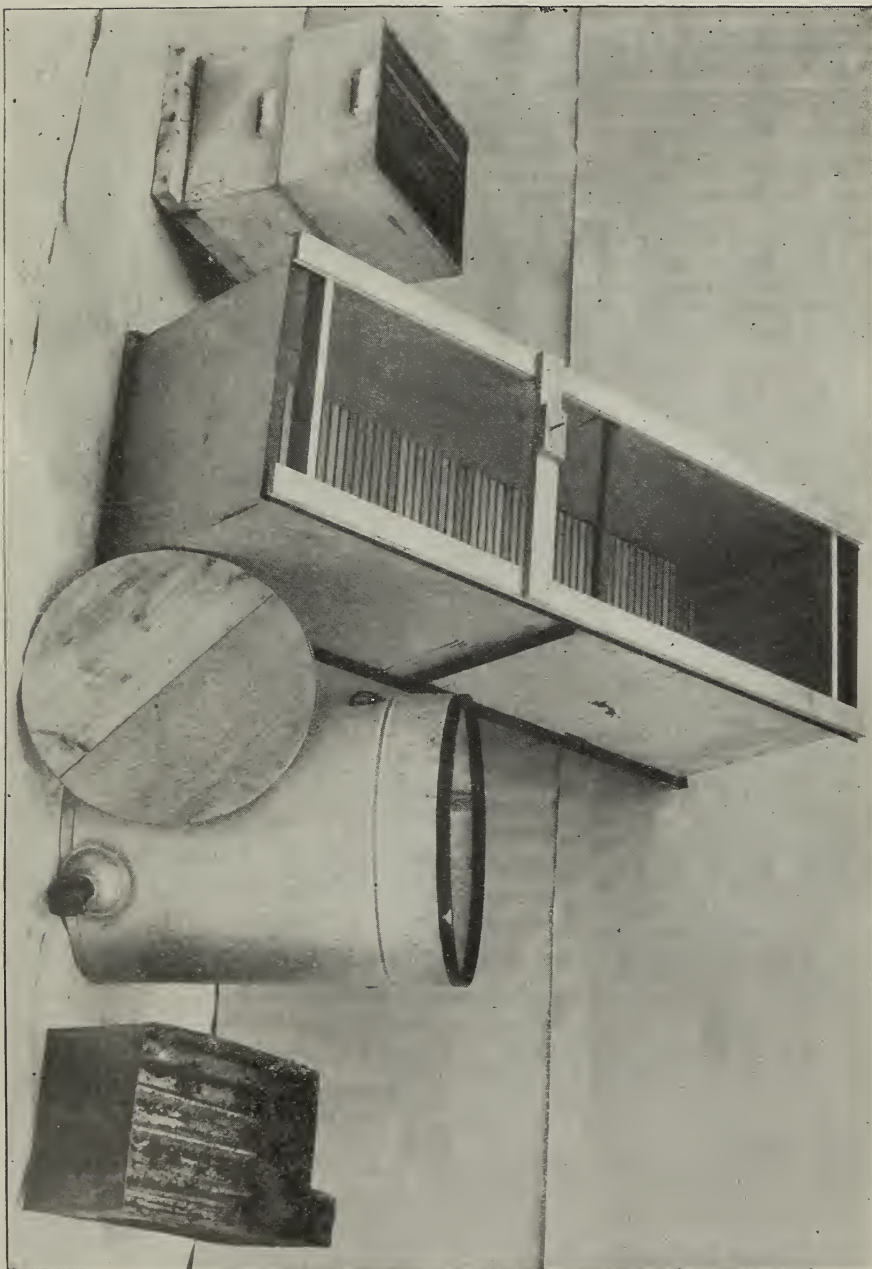
Dear Ernest:—I have run across something in the bee line that is new to me, at least, although it may be as old as bee-keeping itself. On the 10th, while looking through one of my hives I saw several old cells, mock queen-cells, with thick walls, and built on the edge of combs full of sealed brood. The cells seemed to have been recently worked upon; and on looking into them, what was my surprise to find an egg, upright and in the proper place, in the center of the bottom of the cell! At first I thought it was evidence of a fertile worker; but, search as I would, there was no other evidence. I think I found three of those old cells, each far away from eggs or young brood, yet with a properly placed egg in each. All were destroyed. To-day I again looked through the same hive, and found four or five more old cells that seemed to have been recently worked upon, yet very plainly showing the unmistakable thick cuplike base of an old cell, and in each was the properly placed egg as before. These were not near young brood. On further investigation I found several young queen-cells started on young brood in the orthodox way. The queen was found somewhat shrunken, and the colony was evidently preparing to swa... m.

What I want to know is this: Will bees under the swarming impulse take eggs from regular cells and place them in old queen-cells? That was what it looked like to me. I do not think the queen *laid* the eggs where I saw them. The queen is getting old; and could it be that the bees were trying to make sure of another (in case the old queen died suddenly) by transferring eggs to those old cells that their apian brains told them were for queen-rearing purposes? I believe you proved that a broodless and queenless colony would sometimes steal eggs from which to raise a queen.

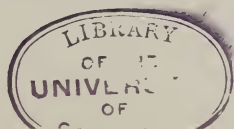
Fort Casey, Wash., June 2.

E. H. SARGENT.

[From all the facts presented, it is evident that the colony was preparing to supersede its old or failing queen. Whether the old queen was a party to this propaganda we can not say, but apparently so. It is not uncommon to find eggs in these old cell cups when a colony is under the swarming or superseding impulse. In that case the queen will lay in these little cups wherever she happens to find them, even if they are remote from any unsealed larvæ. While queenless bees might take eggs laid elsewhere in a hive and transfer them to the cells in question, yet in this case, where a queen was present, it is doubtful. One can usually tell whether an egg has been deposited in a certain position by a queen or whether placed there by worker bees. There is no doubt that bees do move eggs under certain stress of circumstances.—E.D.]



IMPLEMENTS USED BY E. D. TOWNSEND IN HIS LATEST METHOD OF EXTRACTING.—*Bee-keeper's Review*.
SEE EDITORIAL.





BEE-KEEPING AS CARRIED ON IN ENGLAND.

BEE-KEEPING IN ENGLAND.

A Glimpse of Several Apiaries Showing how the Work is Carried on.

BY JOSEPH TINSLEY.

I am forwarding to you several photographs of English apiaries and bee-keepers, with some interesting information, in the hope that many of your bee-men will be pleased in seeing how we carry on the industry in the old country.

The upper view, p. 422, shows the apiary of Miss Baggeley, Swymerton, Stone, Staff. Miss Baggeley is one of the many successful bee-keepers in England. Her occupation is housekeeping at a large farm house, and in her spare time she attends to the bees. The three frame hives are of the "W. B. C." pattern. A glimpse is also seen of the old-fashioned skep, and the same is fixed in the photo in the manner in which it is adapted for supering. There are still a number of these primitive hives in England; but their numbers are rapidly diminishing as the growth of scientific bee-keeping continues. As an exhibitor this lady has been singularly fortunate, winning many medals and prizes. She always gets one shilling per lb. for her honey—about 25 cents.

Mr. J. Cooper, Rose Cottage, Petsall, whose apiary is shown in the middle view, is situated on the borders of a large industrial center. He is not located in the best district for bee-keeping, but nevertheless in 1908 he secured from five hives 300 lbs. of superior honey. An excellent photo is shown of his Wells hive, for which he has great admiration.

The lower view shows the apiary of a more extensive bee-keeper, Mr. George Evans, Bromstead, Newport, Salop. Mr. Evans is employed on a large estate as woodman, and in his spare time he attends to his bees, consisting of some twenty colonies. He is one of the most successful exhibitors we have, and has won quite a number of medals. Situated in one of the best districts in the county, he produces comb honey of exceptional quality. To show how successful he really is, he averages from the sale of honey about £50 (\$242), and £5 (\$24) in prizes. Single one-pound bottles he sells at 25 cts. each, while for 1-lb. sections of comb honey he rarely receives less than 32 cts., and, as he says, he could sell more each

year if he had it. It is good news to hear that he has never been able to fill all the orders he receives for honey.

In the separate view is shown one part of Mr. J. Tildesley's apiary at Tamworth, Staffordshire. As will be noticed, Mr. T. makes his own hives from boxes. He has only a few squares of ground at his back door, being situated in the center of a town; but he manages to keep three hives here. The remaining colonies are situated in the open country. An idea can be got from a method of spacing the frames. The brood-box, you will notice, has ten frames properly spaced for brood-raising, while a larger "spacer" is fixed on the shallow bars, reducing the number to eight.

Stone, Staffs., England.

CAN COMBS AFFECTED WITH AMERICAN FOUL BROOD BE FREED FROM DISEASE?

A Scheme to Get Rid of Disease by a Large Force of Young Bees.

BY HENRY STEWART.

[Some time ago the writer of the subjoined article wrote, stating that he had discovered a method of cure for foul brood that he thought was very valuable, and wished to know how much we could pay him for a series of two or three articles. We told him to send them on and we would later write him what they were worth to us. They came duly to hand, and, after a careful perusal of them, we decided that he had something worth presenting and offered him our top-notch price. The first of the series is here given.]

The writer, Mr. Henry Stewart, an expert bee-keeper, is one of the most extensive producers in the United States. If what he says had come from a smaller bee-keeper with lesser experience we are frank to say that we might have dismissed the whole matter as hardly worthy of attention; but we know Mr. Stewart too well to believe that he



MR. J. TILDESLEY, AN ENGLISH BEE-KEEPER WHO MAKES HIS OWN HIVES.



ONE OF HENRY STEWART'S APIARIES AT PROPHETSTOWN, ILL.

would exploit any thing of this kind unless it had real merit. In a word, his general scheme involves the principle of making sick colonies extra strong, and saving all combs, no matter how badly diseased. Apparently, if a hive has a large force of young bees it may be possible for it to clean infection from combs that are fairly rotten with it.

We are not so enthusiastic as to believe that Mr. Stewart's method of cure is going to revolutionize our methods of treatment for foul brood. So many things have looked good in the past, apparently were good, and turned out to be failures after all, that we confess that we are becoming more and more conservative. For the present, at least, we lay this treatment before our readers with the hope that many of them, who will be in position to do so, will give it a trial and report results.

If we can save not only the bees, honey, and the hives as well as the combs, and yet keep right on producing a crop of honey, it will be worth millions to the industry. We therefore solicit a most careful and unprejudiced reading of this and the article that is to follow.—Ed.]

American foul brood can be cured without the loss of a particle of healthy brood or of a single diseased comb, and without interfering materially with the production of honey, a laying queen being on duty at all times. Now, if I had read this a few years ago I would have doubted it; but I have had considerable experience with the disease, and I began with the orthodox treatment, following the advice of the best authorities. I shook the bees on foundation, melted up the combs, steamed the frames, and burned out the hives of hundreds of colonies. When the Alexander treatment came out I had much faith in it; and as soon as possible I selected several good strong colonies, removed the queens, and watched the results, expecting to requeen, at the proper time, on healthy combs; but the process of cleaning up seemed to go on all right until the last end, when, at the expiration of 28 days, the evidence of the disease would be gone with

the exception of a few scattering capped-over cells. I continued with some of these colonies until they were reduced almost to nuclei, and yet they would not uncapped and clean up these cells. My next move was to take some of these nearly cleaned-up combs, and get them above queen-excluding honeyboards over strong colonies. I then found that the combs were quickly filled with honey, and the diseased cells cleaned up, so that all appearance of the disease disappeared. Afterward I extracted the honey from the combs and gave them to healthy colonies to be filled with brood, the result being healthy combs.

One September I discovered near the shop in my home yard a queenless colony, weak in bees, with the combs badly affected with foul brood. At the time I was taking off honey, and, as usual, I removed the supers with the bees in them and carried them to the shop, letting the bees leave the combs and pass out through exits in the screens and so return to their hives. Frequently there would be clusters of young bees that would not find their way back; and to keep up the strength of this one foul-broody colony mentioned I often dumped these clusters of young bees in front of the entrance, expecting to destroy the combs later and give the bees to some colony which needed them. This, however, was neglected, and a little later I went to Massachusetts with a carload of honey and was gone several weeks. When I returned I expected to render those foul-broody combs of this one colony at once; but, to my surprise, the brood was perfectly healthy. These same combs that were almost filled with disease were now cleaned up. Therefore, instead of consigning the

combs to the wax-press I hunted up a colony that was weak in bees and united the two on these cleaned-up combs. This colony wintered well and bred up strong and healthy the next spring. This test was a severe one, as the combs were in an advanced stage of the disease; but they were cleaned up after the close of the honey season—something that I did not at all expect.

As is my custom, about the first work that I do in the spring is to inspect every colony by removing one of the center combs and looking for foul brood; and when I find it I mark every diseased colony. This year but very few diseased colonies were found.

On page 39, Jan. 15, Mr. Chas. Stewart, in criticising Doolittle's advice on foul brood, says, "I have seen so much trouble come from feeding back honey taken from diseased colonies, even though it was boiled, that I have always advised against it except in the hands of an expert." I should like to cut out the last clause of this advice and then emphasize the rest. I will give a little of my own experience. Several times I have boiled and fed back infected honey without bad results. One year I had quite a lot of honey from diseased combs saved from the year before; and about May 1 I set my hired man to boiling it up and we fed it to the bees. Soon afterward I found my home yard badly diseased, and I was desperate. To shake the bees meant cutting the surplus honey crop in two, besides lots of work, when I was needed elsewhere; so I decided to do no melting of combs, but to run these colonies for the honey they could produce, regardless of the after-effects. At that time, before the white-clover bloom, there was but little honey in the hives. There were a great many combs free from brood or unsealed honey. I reasoned that many of them might be free from infection, so my first step was to take from one colony all the frames containing brood and proceed with them to some other colony and take from this second hive all combs apparently clean, and replace them with the foul-broody ones; then put the foul-broody combs back in hive No. 1, and give to this first colony the clean combs from both hives. In this way one of the colonies was given the advantage of a clean set of combs while the other had double the amount of brood. I tried quite a number in this way, the result being partially successful. With the colonies that had the clean combs the majority remained clean, although some of them contracted the disease in a mild form. The other colonies, that is, those that were given the double amount of brood, soon became very strong.

My experience of previous years in getting combs cleaned up, both honey and brood, caused me to go further, and I made a lot of special honey-boards for the purpose. They were made like ordinary queen-excluding boards except that they were solid wood with the exception of two rows of queen-excluding holes extending lengthwise across the board. I placed these boards on strong col-

onies. I shook the colonies on to foundation first, and then placed the combs above these honey-boards, to be filled with honey after the brood had hatched and the cells were cleaned up. Then, after extracting, I exchanged these cleaned-up combs for other sets of foul-broody combs, and in the process observed this result—that the colonies made strong by additional brood seemed to suffer no more from the increase of the disease than did others which had no foul-broody combs above the brood-chambers. The clean-up process was so successful that I continued it as fast as I could; and to hold the disease in check in other colonies I put queens on clean combs. Other queens I put on foundation, and then put foul-broody combs above my peculiarly constructed honey-boards. I had all kinds of results. In many cases I was successful; but a few contracted the disease in a mild form, while many queens would sulk and the force of bees go above and start queen-cells. Some of the queens disappeared. The honey season being a good one I secured a very satisfactory crop of honey at a yard well stocked with extracting-combs, and all the hives were comparatively free from foul brood in the fall. This was four years ago, and in this yard of 200 colonies I have scores of sets of these cleaned-up combs in the brood-nests that are in use to-day.

Last August Mr. W. B. Moore, foul-brood inspector, visited this yard, and I took him to a row of twenty colonies fitted up for extracted honey, with the queens having free access to all the combs. These twenty hives are of a different shape from the rest of my hives, and I know that every set of combs that they contain have been foul-broody. He inspected them thoroughly, and could find no trace of the disease, in spite of the fact that there was a honey-dearth at the time.

Prophetstown, Ill.

Continued in the next issue.

DRUGS VS. TREATMENT.

Curing Foul-broody Colonies by Immersing in Carbolic Syrup.

BY JOHN W. LOWRY.

I have recently waked up to the bee-keeping world. While I have always kept bees to supply my own table with honey, for the past fifteen years I have turned my attention to other things, and have not been reading the bee-journals. I read the A B C of Bee Culture 20 years ago, and was very enthusiastic over the bee business at that time; but other things caused me to lose much of my enthusiasm; but it has been aroused again—I think for all time. I am now reading GLEANINGS regularly, and have your 1908 edition of the A B C and X Y Z book. I awake to find foul brood in its two forms still the worst drawback with which the beekeeper has to contend. I had some experience with this disease fifteen years ago (the



CHITTAM (*Cascara sagrada*), SHOWING THE BLOSSOMS AND LEAVES, ONE-SIXTH NATURAL SIZE.

kind prevalent at that time). I had two colonies, while in Florida, of pure Italians, which were badly infected with this disease. I made a study of the disease, and hit on a remedy that completely cured my bees with very little trouble or expense.

One thing I used in my medicated syrup was carbolic acid. I made a thin syrup with granulated sugar and hot water, then added my chemicals; stirred well in a large dish-pan. When it had cooled to about the temperature of fresh milk I took the pan to one hive, took the frames, one at a time, and immersed them completely in the medicated syrup, bees and all, then set them back in the hive, and so on until all ten frames had been immersed. I then put on the cover, which did not take as long to do as it does to tell how it is done. I then took a small strainer I had made of wire cloth; dipped the bees left floating on the pan of syrup, and placed them on the alighting-board. The bees then buzzed around and sprayed the front of the alighting-board, and all inside the hive, with the thin syrup on their wings; also the few bees left on the inside walls of the hive got a thorough spraying by the immersed bees crawling and buzzing among them. Strange to believe, but the bees thought the best way to get rid

of this syrup was to eat it, and they did so; and if it hurt any of them I never found it out. It was then in their stomachs, on their backs, in the cells, all inside the hive, everywhere a bee would go.

Then the other hive was treated in the same way. This was done late in the afternoon. In six days I gave the same bees another immersion, the same as the first; in six days more, another—three in all—job finished.

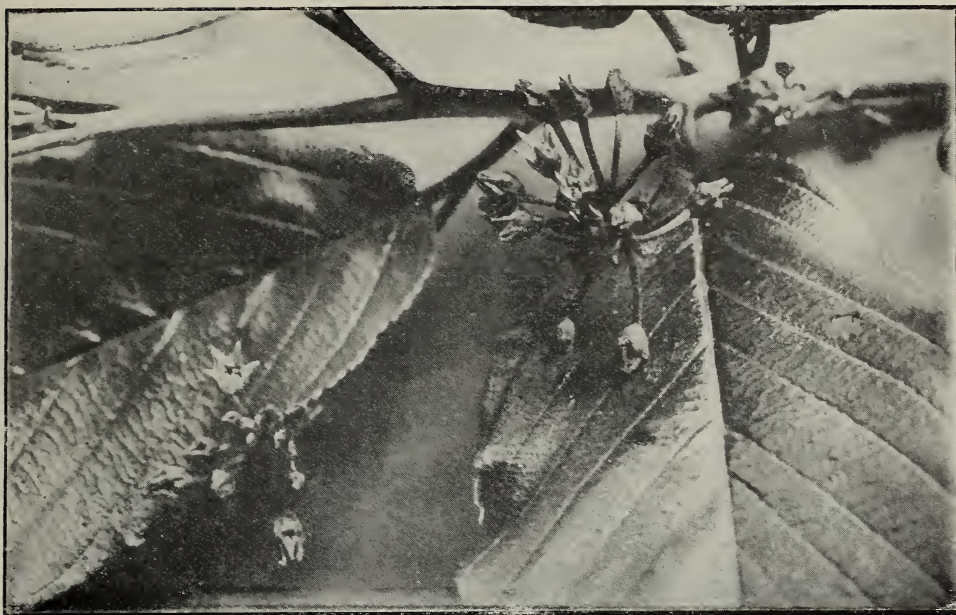
In these treatments I never looked for queens. They went under with the rest. (This is not Bible immersion, but foul-brood immersion.) I believe this treatment will cure both kinds of foul brood. I kept the same bees on the same combs year after year, and it has now been 16 years, and my present stocks are descendants of those diseased colonies, and I have never seen a trace of the disease since.

Grenada, Miss.

[The plan you describe, of smearing combs and bees with carbolic-acid syrup, was thoroughly tried by us some fifteen or eighteen years ago on some fifty-odd colonies that had real foul brood. We secured the best carbolic acid we could obtain; tried it in a syrup, and then in the form of a spray, the acid with water in the proportion of

anywhere from five to ten per cent. Our diseased colonies were fairly doused with it, time and time again; but in every case, sooner or later foul brood would reappear.

If there is any thing we think has been proven during the last fifteen or eighteen years it is that carbolic acid in the proportion of only about five per cent strength will not cure foul brood. Recent evidence has come to our knowledge that a colony suffering from only *dead* brood will, under some conditions, show all the symptoms of a real foul-broody colony. The dead matter will rope, and will have the characteristic foul odor; but it is not foul brood. If you had a case of this sort, the colony would have recovered just as soon without any application of carbolic acid. The probabilities are that the liberal feeding of syrup stimulated it to the extent that they were able to recover from the shock of dead brood. Bacteriologist Dr. White, of the Bureau of Entomology, we understand, put microbes of foul brood in five-per-cent solutions of carbolic acid. These microbes (*Bacillus larvæ*) continued to thrive for months at a time, showing that carbolic acid had absolutely no effect upon them. While it would kill them when stronger solutions were used, yet such solutions would kill the bees.—ED.]



CHITTAM BLOSSOMS, NATURAL SIZE.

FORMALDEHYDE-SULPHUR TREATMENT OF FOUL-BROODY COMBS.

Is it Wise to Rely on Drug Treatment?

BY J. G. GILSTRAP.

In GLEANINGS for March 1 are several valuable papers on foul brood and European foul brood. I have as yet never had any personal experience with the latter disease; but I have had some experience for about eight or nine years with American foul brood.

E. E. Pressler, page 141, referring to Mr. Alexander, quotes him as saying, "The old American foul brood is incurable. You can save the bees by the McEvoy treatment; but you can not save the combs." . . . "I wish to have it understood that I do not think that, up to the present time, there has ever been a comb that was affected by American foul brood cured of that disease.

. . ." Well, I hate to stand against such testimony. I am sorry Mr. Pressler and Mr. Alexander were so unfortunate in their efforts; but my personal experience has been to the contrary of their views.

I believe it was eight years ago this summer that I made some progress in curing and actually eradicating American foul brood and saving the combs. I saved many combs and used them afterward, with no bad results.

I prepared a box about four feet square each way, hinging a close-fitting door in one end. I made the box air-tight, or as nearly so as I could; and after a number of quite successful treatments I selected a strong

two-story hive that was well supplied with brood—about fifteen frames of it; but I think fully one-fourth of this brood was rotten. Oh such a terrible mass as it was! I removed the queen and bees into an empty hive on the old stand; placed the two-story diseased hive, together with a lot of other infected material, in the aforesaid box, and placed a pan of coals in which I put nearly a teacupful of sulphur; then in another pan I set two formaldehyde candles burning, and closed the door. In about five hours I opened the door, put in another charge of both sulphur and formaldehyde. In a few hours I opened the box, and on examination the combs were "frosted" with the sulphur, and very strong of the gas. I marked that particular hive and super, and then examined the broody combs. I found that *all* the rotten foul brood that was stringy and ropy before treatment was now changed to a granular form; it would not string out, nor adhere to a straw, stick, or pin; it was more of a crumbly nature. The next day I selected a healthy colony—one of the best in the apiary; and, clipping the queen, I threw the bees and queen in this two-story treated hive containing brood-combs and honey (ten-frame hive), and for two or three days the bees were rather obstinate about not remaining, but finally went to work. I kept these particular combs with this same hive and bees, and after more than one year from then no trace of foul brood ever showed up in that hive, when I quit keeping further track of it. I *know* American foul brood can be cured; but I think it is rarely accomplished.

I have done no experimenting on these



YELLOW SWEET CLOVER, SOWN IN NOVEMBER, AND IN FULL BLOOM THE FOLLOWING JUNE.

lines for about six years; but I shall take the matter up again this year if I find any foul brood of consequence, having this spring been appointed inspector of apiaries for Stanislaus Co.

E. M. Gibson, page 146, throws out a challenge that I wish to call him on. He says, "I have never been able to find honey and scale in the same cell. Has any one?"

Yes, I have, and in many hives. I have found on brood-combs that were filled with honey, and nicely sealed over, many cells that would look a trifle darker and more sunken, usually, than those around them; and on examination would find the foul brood in the bottom of the cells unmolested except for the honey filled in on it. These cells of infected brood contained the rotten mass in all stages from ropy to dried-down product.

I can name several persons, seven or eight, that have observed this same thing often in this county.

Ceres, Cal.

[Some five or six years ago quite a number of our correspondents were enthusiastic over this method of disinfecting combs affected by American and European foul brood. The earlier reports seemed to indicate this plan of fumigation as here outlined was effective. But later reports showed that the general scheme was too unreliable, and that combs badly infected could be disinfected by means of formaldehyde or formalin, only in a clos-

ed chamber under the most favorable conditions—conditions that the average bee-keeper, either from lack of knowledge or lack of proper facilities would be unable to apply. In the second place, if this kind of treatment for disinfection of comb were sanctioned by the bee-journals, many inexperienced persons would make the attempt to disinfect them, and the result would be that their bees would be reinfected, because nine people out of ten would only make a failure of the plan. Experience has shown that, where such combs contained a little honey, no amount of fumigation in a closed box would kill the microbes covered by the honey. It was also shown that sealed brood, brood that had died from disease, could not always be reached through the cappings. Failure to kill the microbes in a single cell of a comb would mean, of course, reinfestation, probably, to any colony to which such combs might be given.

General reports show that drug treatments in nearly all cases are an absolute failure. The sooner bee-keepers let them alone the sooner they will get brood diseases under control.—ED.]

CHITTAM AN IMPORTANT HONEY-PLANT.

BY P. W. NICOLLE.

During the past year I have noticed some discussion regarding chittam (*Cascara sagrada*). As chittam is our chief source of

nectar, perhaps a few words in regard to it would be of interest.

Throughout the timbered regions of Western Oregon and Washington, portions of California, and of British Columbia, this is one of the most important honey-producing plants. The honey made from it is of a medium to light amber of delightful aroma, and possessing none of the cathartic effects of the bark of the tree, which is taken here by the ton and sold to dealers in its dry state at about 5 cents a pound. When the honey is fully ripened it is too thick to extract successfully, the combs breaking, and the honey not flowing readily enough to secure as much as possible with other varieties. The flow from this source is just commencing, the accompanying illustrations having been made from blossoms secured yesterday, May 14.

In most places where honey from this source is secured it is a difficult matter to get it in a pure state as there are so many other nectar-producing plants and trees. For instance, the vine-maple flow is just closing; wild blackberry is producing very well; huckleberry, salal, and thimbleberry are producing something, and white clover is just coming into blossom.

Mapleton, Oregon, May 15.

YELLOW SWEET CLOVER SOWN IN NOVEMBER, AND IN FULL BLOOM THE FOLLOWING JUNE.

BY A. I. ROOT.

[The following was written for the new edition of our booklet on sweet-clover growing; but being of general interest to bee-keepers at this time, we decided to use it here.—ED.]

June 14, 1909, Mr. Philip Bohley, a man in our employ, brought me a stalk of yellow sweet clover 5 ft. tall, covered with bloom. He said the plant came from seed that he sprinkled along the roadside in November the fall before. He did not notice whether the seed came up in the fall or not. All he could say was that there was no sweet clover in that place the year before. The circumstance was so remarkable that myself and Ernest took a trip there to see it; and the picture adjoining is supposed to be myself standing among the sweet-clover plants. I took off my fur cap and donned Ernest's hat, and that is one reason why I do not look natural. The matter was mentioned in GLEANINGS for July 1, 1909, p. 418, and I then inquired if anybody else had secured a successful stand of sweet clover, either white or yellow, when the seed was sown as late as November. Several letters informed us that the same thing had been done by sowing the seed in August and September, but none as late as November. Mr. Bohley says the horses grab for it every time they go past it. Remember this seed was not in cultivated soil, nor had any effort been made to cover the seed in any way. It was just scattered along the roadside adjoining his own premises. If this thing can be dupli-

cated it would seem to indicate that yellow sweet clover will furnish a large amount of good food for stock, or for plowing under, in a shorter time than any other legume or *any thing else*.

THE LONG-IDEA HIVE FOR EXTRACTED HONEY.

BY GEO. SHIBER.

I have been interested in the articles by F. Dundas Todd that have appeared in GLEANINGS of late, especially the one on p. 439, July 15, 1909. He says he is preparing to raise extracted honey—that he has adopted the eight-frame width of hive, and that he has cool nights during his honey-flow. To this last point our friend says he has given long hours of thought. He also says he does not feel that he has in any wise arrived at a solution. I began my bee experience 23 years ago, and I have been doing the same thing every year, thinking and planning, then often finding that I had reached no solution. He also says he has adopted the divisible hive. Now what I am about to say is the outgrowth of experience in many plans which I have tried; some have been good, others bad.

Let's analyze the above combination.

1. Extracted honey.
2. Eight-frame-width hive.
3. Cool nights during flow.
4. Divisible hive, 5¾ inches.

1. In raising extracted honey we must have a large hive. Many times we must have the equal of thirty to forty L. frames. Now pile up those shallow (5¾-inch) cases until this capacity is reached. You will then have a tall narrow pile, at night the heat radiating from the sides and ends (it's ¾ inch, probably); so the extra-warm cover he uses will not amount to much to prevent the cooling of the super part of the hive. What happens in a hive when this occurs? Why, the bees draw down, down, to the brood-nest, leaving the supers nearly or quite bare of bees. Surely this is not the right condition of affairs for the securing of a maximum yield. I might say right here, that, as I live in New York State, and he in the extreme Northwest, perhaps our locality being different the plan might succeed better than the one I recommend.

2. Eight-frame width. This would be objectionable, as it would increase the radiating surface over the ten-frame size.

3. Cool nights. If the nights are cool during the flow, the hive must be made warm enough so the bees will occupy all the super room which they occupy during the day, that the nectar may be properly ripened.

4. These would, I think, be better ten-frame width; but we will drop the part for the present.

Most progressive bee-keepers know of the "Long-Idea" hive. It is not new; in fact, it was very old when I began reading bees in 1886. Let me name some of the advantages of this hive for extracted honey. The

one I use is 40 inches long; 5 to 6 inches higher than the standard hive, and the same width. This will hold 28 Hoffman frames comfortably, equal to $3\frac{1}{2}$ eight-frame bodies. There is a space of about five inches above the frames for quilt and packing—that is, the frames go down into the hive 5 inches. Notice the large surface protected on top of the frames—800 sq. inches—while Mr. Todd's hive would have about 250 square inches thus protected. This hive has an immense advantage over the standard hive during the building-up period in the spring. Let the queen occupy all the frames she will—the more the better; then as the flow continues the brood-nest is contracted down by the bees and queen toward the center of the hive, and honey follows the emptying of the cells by the brood. Mr. Townsend described this contraction of the queen at the close of the flow so she is gradually crowded down into the brood-chamber. He was talking of the ten-frame hive; but how much nicer it is accomplished with the "Long-Idea"! I use the standard frame in this hive.

Another point. If you should want to look into the brood apartment during the time supers are on, no lifting off of heavy stories, simply take off the cover and help yourself. It may be said that one should not disturb the brood-chamber of strong-storing colonies. True; but there are times when one is obliged to; for instance, a queen falls down, and a swarm with a virgin comes out. Now, to return, the swarm-cells must be destroyed, and you have to lift off the stories.

I do not think bees in one of these hives will be as likely to swarm as they will in eight or ten frame hives tiered to equal capacity; and now I am very sure more honey can be secured with this hive than by using the eight-frame body or the eight-frame $5\frac{3}{4}$ -inch body.

I am very sure the bees do not have to (so many of them) remain at home to heat and ventilate the hive, and they can, I think, get out and in quicker. Colonies of equal strength will send more bees into the field than it will in the eight-frame size.

I think there is a whole lot in this case of ventilation where they are all on one level, as all parts of the interior of the hive are near the entrance.

I know this form of hive is not extensively used. Mr. Poppleton, of Florida, has always advocated it in his writings, and I suppose he is using the same hive still; but if my memory is correct he does not use the standard frame.

I do not think this form would be liked for comb honey at all. I certainly should not like it for that purpose.

Where nights are cool (and we have many here), that thoroughly protected Long-Idea hive seems to give the largest yield, every thing else being equal. I know they give more surplus.

Randolph, N. Y.

A SIMPLE SYSTEM OF BOOK-KEEPING FOR HONEY-SALESMEN.

BY WESLEY FOSTER.

For the average bee-keeper who sells his crop to the home stores or those of near-by towns, the need of a simple yet accurate method of keeping track of orders and accounts is felt. Here is a plan that will answer in most cases where the business done is not extensive. Order-books with carbon paper for making a duplicate of each order are used. Books, $3\frac{1}{2}$ by 6 inches, containing 100 sheets, or enough for fifty orders, may be purchased for 50 to 60 cents per dozen books. (Sheets 5×8 inches are better, but the smaller size will do.) The books are printed with spaces for date of sale, date for delivery, terms of payment, and the buyer's and seller's name and address. These should always be filled in carefully and legibly. They are just as important as getting the right number and grade of goods down on the lines below.

Now, when delivering honey the original order-sheet is used as the buyer's invoice to send with the goods. If the goods are sent C. O. D., the original bill or invoice is marked "Paid" on receipt of the money. The

BOUGHT OF		
Charles Bates		
BOULDER, COLO. <i>Jan 6 '10</i>		
When Deliver	Terms	
<i>Feb 1 '10</i>	<i>Cash</i>	
<i>Geo West</i>		
<i>Denver</i>	<i>1400, Boul. Fr.</i>	
1 Case #1 Comb Honey	3	50
2 Cases #2 " " #3	6	00
1 Doz jar Honey (10¢)		90
		<i>#10 40</i>
<i>Paid</i>		
<i>Feb. 1 - 1910</i>		
<i>Chas Bates</i>		

bill should be marked "Paid" before being torn out of the book so as to make the duplicate copy correspond with the original, which is given the buyer as his receipt for the money paid. The name and the date should always be written under the word "Paid." This makes the bill a receipt that will stand a legal test.

this swarm of blacks; and cutting out the queen-cells and drones once in a season does the work, and that, no doubt, was a factor in getting over 100 lbs. last season.

Oneco, Conn.

THE ITALIAN VS. BLACK BEE.

Italians Ahead of the Blacks in Most Points.

BY GEO. SHIBER.

I have read with much interest the article on page 296, by Mr. D. M. Macdonald, of Scotland, on the merits of the black bee. Of course, we have read all these points, pro and con, in regard to the German bees in years gone by, as all the journals have discussed them over and over again; so have also the good and bad qualities of the Italian bees been laid before us in the same way.

To consider fairly which bee is best for us of all the races, it is well to inquire what we want them to do—to work them for extracted or comb honey. If for extracted honey, the white cappings of the blacks cut no figure; but we do want them to build up strong and to be good honey-gatherers. Now, then, that is about the whole of it, and also, I will add, gentleness, which the Italians have. They are not panicky under manipulation.

I never saw a single black colony that was not; and if they are smoked enough to subdue them so they can be handled as comfortably as Italians they will be simply scared to death and pile out of the hive.

Now for extracted honey. I have tried them long enough to be satisfied that the Italians have the blacks beaten by a long sea mile; and, again, hybrids are away ahead of black bees. I might say right here that my experience has been that the hybrids are far superior to either race for comb honey; but for pounds of extracted honey the three-banded Italians are entitled to the palm. Mr. Macdonald says they are a "soft" race there. I know there is a difference in them, of course. We shall find a choice among the choice in every thing.

This spring I bought three colonies of a farmer, one of which was, I think, pure black. Well, now, it was interesting to note, on a cool morning when but few bees were flying, the blacks would be the slowest to come out of the hive.

Oh, yes! if we had nothing but black bees in this country we could still do business "keeping bees," and we should have honey to sell too; but would we enjoy handling them as well? Of course, if the blacks went away ahead of them, that would be another question.



WHAT IS LIKELY TO HAPPEN IF COMB HONEY IS SHIPPED WITHOUT BEING PROPERLY PACKED.

Now, lastly, why does not some enterprising queen-breeder go to raising black queens and offer them for sale, if they are superior or even equal to Italians?

Twenty years ago I saw many advertisements in the journals offering Cyprians, Syrians, etc., for sale; but these have been crowded out, as well as nearly all others, by the Italian bee; and these could not have held this almost world-wide prestige were it not for the fact that they possess merit.

Robbery? Oh, yes! Why did not our friend mention that beautiful characteristic of the blacks? and if some of the things we are reading about of late in regard to black brood be true, that Italians are immune, then I for one feel safe in keeping my Italians, which are mostly pure, and which I have bred up to such a point that I know just about what they will do under certain conditions. There is a good deal, my friends, in being acquainted with your bees.

Randolph, N. Y.

PREVENTING AFTER-SWARMING.

BY H. E. HARRINGTON.

After-swarming is a nuisance to any bee-keeper. The swarms are generally small and valueless, and the parent colony is ruined for honey production, so after-swarming should be prevented if possible. Suppose the bee-keeper is producing comb honey, and is indifferent to increase. He gives section room as fast as his bees need it; but a first swarm issues in this case. I think it best to hive the swarm and place it on a new stand, as I think as much honey will be obtained from the two as from the one without swarming, as this satisfies their natural desire, and they will work with all their native energy. But after-swarming should be prevented in every case; and the best way is to remove all surplus queens from the parent colony. It is a bother to have a second swarm issue. The young queens are smart on the wing, the swarm does not settle quickly, and often alights in a difficult place; but it must be secured and returned, or the parent colony will produce no more comb honey.

I think it is a good plan to examine the parent hive the evening after a first swarm has issued, so as to know something of the age of the cells. Do not remove any of these, as they will be rebuilt. But about four or five days after the first swarm has issued (according to the age of the cells), listen at the hive every night and morning. Place your ear against the rear of the brood-chamber so you can hear the internal sounds of the hive. The bees are stiller just at night and in the early morning. If the colony intends to cast a second swarm, the first-hatched queen will utter a cry which

sounds thus: "Key, key, key," quite often. Another unhatched queen will respond the same, only in a hoarser tone. This is the proper time to operate on the parent hive. Select the time of day most convenient, as robbers are not generally troublesome at this time. Get another brood-chamber (two are better), the same as the parent hive, with honey-boards or sacks to cover the same if there is any robbing. The young queen very rarely enters the sections, so these can be removed and set aside. Raise a frame and hold it a few feet from the hive so as to hear the queen should you have her on this frame. Place this frame in one of the empty hives, and so with all the rest. If the queen is located, place this comb in the other empty hive. The last comb may be thoroughly examined for cells. Have the small blade of your knife sharp, and remove every cell. Place these on a hive-top.

May be some of the queens are just gnawing out. If they are good stock they can be saved. After cutting off all cells that can be seen, shake the bees into the old hive and again examine the comb for more cells. This comb might be turned bottom up so as to see the cell ends. Remove all cells, capped, uncapped, or hatched; look sharp, and be thorough. Do this to all the combs as they are returned to the old hive. See the young queen safe in the old hive. Keep your eye on the removed cells, as queens are pretty sure to come out. Cut open every cell, as sometimes a queen emerges from a cell, leaving the cap hanging to one side. A worker will enter the cell, and another worker will seal down the cap and imprison this bee. On opening this cell you will find a dead worker with its head at the bottom of the cell, the reverse of the queen.

You should have a queen for every cell but one. If more than one there are two queens in the hive, and a swarm will surely issue. It might be a good plan to cage all queens you find hatched and on the combs, as you might return one and have to look her up. If you have two queens in the hive you must look one up. Leave only one. It is a good plan to listen the evening after operating on a hive. You might hear the queen, but she will soon stop if no other queen is in the hive. If you hear two voices you must look up one of the queens. I think this is the best and easiest way to prevent after-swarming. If you should hear no queens after listening a week or more, examine the hive. If you find a cell open on one side there will be no more swarming. You need not listen over five minutes at one time. You will soon get so you can do this in a short time—at least I would rather do it than return a swarm; and you would have to do it if you wanted the swarm to stay. Out of 25 hives operated on I generally have but one second swarm. You should examine the parent hive about three weeks after the first swarm issued, to see if the young queen is laying.

Lyndon Center, Vt., Jan. 29.

Heads of Grain

from Different Fields

Some Questions on Keeping Bees in an Attic.

I have kept bees where I had plenty of room for the hives, but expect soon to move to a city lot where there is neither room to set the hives, nor, I think, neighbors who would be pleased to have bees in the back yard. But there are two gables, one on the north and one on the south side of a large attic chamber. As I understand it, the idea is to give the bees so much room that they are kept busy continually, trying to fill their hive, and so have no need of sending out a swarm. I should like to get advice. First, can I keep bees in this attic without their swarming? If so, how? By giving extremely large quarters? Should they be given all frames, and the honey extracted, or can I use sections also? Can the bees work as well from a hive in the third story as from one on the ground? Which side should the hive be set—south or north? What breed of bees will do the best work in one of these upstairs hives?

WHY NOT IMPORT STINGLESS BEES?

I read some time ago that there is a stingless bee in Mexico. Is this true? If so, can they bear the cold of a northern winter? If they can, why don't we import lots of them? If the bee could only be induced to leave its sting behind, and forget to have one, every one would have a hive or two of bees. Ten times—yes, a hundred times, the amount of honey would be eaten if it could be purchased conveniently, or "home grown."

KIT CLOVER.

[We expect to have a series of two or three articles on how to keep bees in garrets. In the mean time we venture to say that colonies should be strong, and the hives in which they are placed should be ample in size. That means tiering up as fast as or faster than the bees need room. If they are at any time cramped they will swarm just as quickly from a garret as they would if the hives were placed on the ground.]

Yes, bees can work as well from a hive in the third story as from one on the ground; and why not? In the natural state we find them in tall trees, and in rocks on the ground or near the ground.

We recommend the Italians rather than any black race. Carniolans and Caucasians will swarm when Italians keep right on working; at least, that is our experience. There may be some strains of old-fashioned black bees that will swarm as little as Italians.

It would never be practical to domesticate stingless bees in our northern States; and even if we could do so they are much more "holy terrors" than bees with stings. With their powerful mandibles they can bite; and while that bite is by no means as severe as a sting, yet when one has several hundred of these little rascals in his hair, each pulling *one hair*, he is inclined to believe he would rather be stung, kicked, and pounded to death than to have a lot of stingless bees after him.—Ed.]

Why Did the Honey Melt when the Temperature was so Low?

My strongest colony this year is hybrid—Italian and black. To-day I looked for this colony to swarm, and therefore placed an Alley trap. About 1:30 P.M. I noticed something wrong, and lifted the cover off the hive. There were two supers on the hive; and as the cover came off, the bees rolled out of the top super in a black sticky mass. After a minute the queen came out too. All the honey had been taken out of both supers, and apparently spilled over every thing. The second super was drenched, and dead bees lay thick on the sections. On top of the brood-frames dead bees lay almost an inch thick, all seemingly drowned in honey. The bottom-board was a mass of dead bees and honey, so that the entrance was choked though the honey was thin enough to run out on the ground, which it did. There were no sealed queen-cells in the hive. The day was sunny but cool; temperature 64 F. in the shade.

In all I think about one-fourth of the bees in this

hive were drowned in honey; but a great many more were lost by trying to force an entrance into other neighboring hives, where they were killed in great numbers. In my ten years' experience in bee-keeping, the above is unique; and I can not imagine the cause. I hope you can throw some light.

Aptos, Cal.

J. W. W. MACDONALD.

[This is a clear case of suffocation. In some unexplainable way the entrance must have been closed. The probabilities are that, in applying the queen-trap, you put it on in such a way that it closed the entrance almost entirely. In the case of a powerful colony, abnormal heat would be generated very soon—heat sufficient to melt down the combs and kill the bees.—Ed.]

Does a Queen or her Colony Give a Warning Two or Three Days Before a Swarm Comes Forth?

Swarming is a frequent occurrence in this locality. Perhaps it may be of some benefit to tell you how I know when a swarm is going to issue. Go out early in the morning and put your ear against the side of the hive. If the colony is going to swarm you will hear "toot, toot, toot, toot," inside the hive. Some say it is two queens fighting; but I believe it is just the queen calling her bees to fill up their stomachs with honey. It will not be over three days before the swarm issues, depending on the weather.

Dacula, Ga.

O. E. BUCHANAN.

[While it is possible that a swarm might give a preliminary "toot, toot, toot," we think that, in the great generality of cases, they do not give any such warning. We know positively that sometimes swarms will issue without any preparation. Sometimes the queen will lead forth, and sometimes the bees; but more often the bees will go forth followed by the queen. On one particular occasion we remember hearing a long "zeep, zeep, zeep," in front of a colony where we were standing. The bees shot out of the hive like shot from a gun, and with them the queen in the vanguard; but we have been present hundreds of times since, in front of hives when swarms would come out, and have never heard that preliminary "zeep, zeep," and in almost all cases the queen was among the last to come out with the swarm.]

If it is a fact that a colony that is preparing to swarm will give the signal of "toot, toot," or "zeep, zeep," two or three days beforehand, no one has reported it up to this time. We shall be glad to hear from our subscribers as to whether they have ever observed any thing similar.—Ed.]

Plaster of Paris a Sure Cure for Rats.

I followed the meat-market business for nearly 16 years in my younger days, at the old home in Wisconsin, and was greatly plagued by rats around our slaughter-house. This was during and just after the civil war. Well, to get rid of them, and not have them a stench to my nostrils, was a study. I tried to kill them off with a shotgun, and did kill hundreds in this way; but they kept coming just about as fast as we killed them, so we did not gain much by shooting. About this time one of my friends advised me to try plaster of Paris, mixed half and half, the same as your correspondent mentions; but I did not set a pan of water near them, because there was a good-sized creek close by. If I should tell you that I and one of my men picked up and buried a bushel basket of dead rats within ten days after giving them the meal mixture I don't think I should be stretching the truth a particle. I was obliged to repeat this about four times each year to keep the pests down. It is an absolute cure; but look out and do not set it where chickens will get into it, as they will eat it with just as good an appetite as the rats do.

Missoula, Montana.

J. M. PRUYN.

Combs Melting when Entrance Was Contracted for Only a Short Time.

A few years ago my hives were in a room facing east. For some reason I closed the entrance of the south hive down to a bee-space, intending to enlarge it in a few moments; but I was busy at the other end of the yard, and it was some time before I returned. When I did get back the honey

was running out of the hive. How the bees and honey did come out of that hive! I don't think there was a dry bee among them, and I thought the whole colony was gone up. On taking off the cover I found every comb in its frame; but every one had let go of the top-bar and settled down on to the bottom-bar, the wires holding them upright. After the bees had cleaned themselves up they soon repaired the damage to the combs, and I don't think I lost over a handful of bees, and two or three pounds of honey. I want my frames wired, although I don't think I'll do a trick like that again.

Brooklyn, Ia.

A. BATCH.

Young Bees Coming Out of the Hive and Dying.

The trouble of which I wrote you seemed to be entirely in the young bees. Hundreds could be seen at the entrance, dying, and weak, while on real warm days, about noon, they would come out, attempt to fly, and drop in the grass. They could not rise. I watched these bees closely every day, and I noticed that every bee in the grass had defective wings. Their wings were apparently very short, or not over three-quarter length. There were also some signs of dysentery in the grass where the bees were crawling around, but no signs of it on the alighting-board or in the hive. Perhaps this was brought on by excitement while trying to rise out of the grass. As nearly as I could ascertain, their defective wings caused the whole trouble.

I am glad to say now that the trouble has entirely disappeared, and the colony is apparently all right. The queen is very prolific. I might say that, during this trouble, I found one queen-cell nearly capped. Evidently the bees intended to supersede the queen; but as the trouble was disappearing I cut out this cell, and no more have been built since, or at least had not been a few days ago.

Ruscomb, Ont., May 23.

C. A. YORKE.

[It is very clear that your shipment of bees was overheated *en route*, resulting in "scorching" or "cooking" the brood, as we call it. If a colony is suffering for want of air, either by closing the entrance or because the entrance is too small, the inside temperature of the hive will go away above the normal. While this does not necessarily kill the brood, yet in almost every case we find afterward, if the bees were not killed outright, that the young bees will hatch out with defective wings, and will be otherwise imperfect. Of course, such bees are not allowed to live in the colony; and if they do not walk out themselves, the other bees force them out. —ED.]

The "Shook" Plan of Swarm Prevention.

I have a colony of bees that is preparing to swarm, and I should like to prevent it. Will the shook-swarm plan, as described on pages 347 and 348 of the A B C book, work in my case? The colony has the queen-cells about one-third completed, and there will be no honey from clover for three or four weeks. You say in the A B C book that it should be done after the honey-flow has begun. I am looking for a good flow from locust in about a week or ten days. I am looking for them out in less than a week. I had two swarms yesterday.

Harrisonburg, Va.

JAS. S. BOWMAN.

[The shook plan of controlling swarming, such as is described in the A B C and X Y Z of Bee Culture, would be fairly effective in the case described. It does very little or no good to shake before the bees show symptoms of swarming; that is, start swarming-cells. —ED.]

Bottom Ventilation Prevents Swarming, Even of Colonies Run for Comb Honey.

There is quite a discussion going on about the prevention of swarming by ventilation. I have tried to my entire satisfaction the scheme of bottom-board ventilation, and it works. Just at the beginning of the honey-flow, raise the hive from the bottom-board about $\frac{1}{4}$ to $\frac{3}{4}$ of an inch, and cut out all drone larvae. That entails a little work, but it pays. Small apiarists can do that easily; but the man who has 600 or more colonies to look after as I have can rely on the ventilation alone. I have tried it in comb-honey production only, but it surely ought to work for extracted honey.

When the flow is over, the apiarist must lower the brood-chamber again because of robbers.

Wasco, Cal., May 22.

M. S. PHILLIPPE.

Shaking to Prevent Swarming.

Where can I obtain an uncapping-fork such as is used in Germany? I want to experiment with it. What do you think of it?

With good swarms at \$2.00 each, and sugar at 5 cts. per lb., is it better to buy or raise bees?

I am watching the discussion on shaking energy into bees; and if, as some claim, a change of residence is all that is necessary, would not the putting of empty combs above or below the brood-nest, allowing the queen to work into them, be as good as shaking the bees on to these combs, provided they do not swarm out? But what makes them swarm out any more in the one case than in the other? Is the mysterious effect due to the excluder, the shaking, or both? Do you think that the shaken colony (brood above excluder) will gain more, either in brood or honey, than one in which the queen is allowed to work down?

Which grain is nearest to pollen in composition? Would it not be the best for a substitute for brood-rearing?

St. Mary's, Ont., Can.

J. H. BURNS.

[For a German uncapping-fork we would refer you to Emile Bondonneau, 56-58 Felix Faure Ave., Paris, France.

Under some conditions bees can be raised very cheaply from sugar syrup. Some experiments made by Mr. W. A. Selser showed they could be raised at \$2.00 a colony or even less. The advantage of feeding would be that you would get fresh stock from choice queens, while stock that you would buy at \$2.00 might be very undesirable.

Your questions in regard to shaking we would respectfully refer to some one who has had more experience than we have.

Finely ground pea meal is said to be the best substitute for natural pollen. Rye flour is very fair, but no substitute is equal to the natural article itself. —ED.]

An Easy Way to Get Extracting-Combs Cleaned.

To produce a good quality of extracted honey it is necessary to get the extracting-combs cleaned out nicely of all honey that naturally sticks to them in order to have them clean and sweet for the next year's crop. To do this I remove the Porter escape from the boards. Place the boards on the hives and then place several supers containing the extracting-combs on these boards. This being done toward evening, and left on a few days, the bees go up and clean the combs, and carry the honey below, with no robbing, and no damage to the combs. In a few days, by raising up the end of the pile of supers the escape can be replaced in the board, and in a short time the supers can be put away for the winter.

Some may say this plan is too much bother, and too slow; but really it is not, for by using ten or more escapes, and six or seven supers (I use shallow frames) on each board or hive, the cleaning goes on while we are at some other work. It takes only a few minutes to put the supers on the hives.

Hilbert, Wis.

GEO. A. CRESSY.

Baling-wire to Support Foundation.

I am using baling-wire for splints. It comes in straight bundles for baling hay. I cut it up the right lengths, and heat it just enough to melt into the foundation.

Terre Haute, Ind., May 25.

J. D. SMOCK.

[We see no reason why baling-wire could not be used to support foundation in the manner described. We suggest that a good many of our readers try it and report. —ED.]

Another Sure Case of Bees Stealing Eggs.

This is my second year with bees. I started last year by buying two three-frame nuclei and increasing to six. These were pure Italians. This year I have increased to twenty colonies. I bought four swarms from parties near me and put them in Danzenbaker hives.

On April 18 I bought a swarm of native black bees from a neighbor of mine and put them in an observatory hive. I had trouble in getting them into the hive, for I had to sprinkle them with water and dump them on the alighting-board; and as they dried off they went into the hive. I was too busy to look at these until May 2, two weeks later, when I found that the colony was queenless. The swarm was a small one—not over five quarts of bees. Now

comes the peculiar part. On one frame there were two sealed queen-cells; on another frame two sealed queen-cells, and one cell on each of three other frames, which made seven sealed queen-cells just two weeks after hiving the swarm.

There was not an egg nor a larva in the hive except these seven queen-cells. If the queen went into the hive with the swarm and laid these eggs, why should she not lay more than seven? and why should she lay them on five different frames? What became of her?

I hived the swarm on the 18th, and on the 20th I worked in my apiary two or three hours. During that time I had frames of brood and eggs, examining them all the time. The queens that hatched from these cells were Italians. Does not that prove that bees will steal eggs?

Mt. Pleasant, Ala.

JOSEPH S. SCOTT.

An Apiary of Badly Confused Bees; What Caused Such a Wholesale Loss?

We took over an apiary the 15th of March which was in poor condition, yet good enough so that we thought that about 80 of 106 colonies would come through. We left them in the hands of the previous owner to care for them for two months. He was equalizing the colonies at the time of the purchase, and had equalized about sixty. We had him stop this, as none of them were strong enough to stand any loss. He neglected to see to them further, however, which fact we discovered in spite of his assertions to the contrary in about a month and a half. We then took charge, finding about 60 colonies, some in fair condition, with a queen and two or three frames of bees. They kept getting weaker in spite of a banner spring. The more we did for them the worse they got; but it was little we could do. The numbers were less each week. We looked until May 1. Only 25 colonies were to be found. Now there are but 10, and we do not expect to find them next time, although they have five and six frames of brood.

The bees were moved from a poor location near a stream about the first of March, and placed on a hillside. They were placed very near together—a foot or so. We understand this to be a poor plan, yet I have seen in GLEANINGS photos of yards so laid out, which the owner, I believe, claimed to have had good success with, for I concluded that the total destruction of an apiary would not result from such a plan.

We found the bees badly confused. Four or five queens were found in one hive with a dozen bees or so. Queens were running around on the ground with eight or ten bees after each. Hives which had, at our previous visit, some bees and brood and queens, were found deserted, with brood chilled. In short, the entire apiary seemed crazy. It was not always the small colonies that were found missing by any means. Now we know something about spring dwindling—what it looks like, I mean. We have had bees abscond after shipment, and because of too large entrances when the swarm was small. We have seen some results of bad or too old queens; but we do not know what to think about a whole apiary of 100 colonies being completely demoralized.

I might add that we saved some of the queens and put them in other apiaries, where they did very well.

We do not mind the loss of the bees; but we should like to get some clue as to what was the cause if we could. I presume we ought to know, but we don't.

Our own bees (we have some nine outyards) are doing better than in any year we ever have had, so we are pretty sure it could not be the weather.

Lander, Wyoming, May 23.

H. P. DYAR.

[From your general description it is a little difficult to decide the exact cause of your trouble. There are some symptoms that would indicate bee-paralysis; and there are others that indicate European foul brood. The fact that you speak of chilled brood or dead brood, and the further fact that the whole apiary seems to be running down, rather point to a brood disease of the European type. In the process of equalizing, such disease will be, of course, greatly aggravated, as the infection would spread from hive to hive.

Generally it is a mistake to put hives close together; but this could not account for the general and wholesale depletion of the whole apiary. It might result in some colonies being overstrong, others very weak, and the loss of some queens.

You say that four or five queens were found in one hive with a dozen bees or so. This is a very peculiar (not to say unusual) combination.

We might suggest further that the bees had been working upon trees that had been sprayed with poisonous mixtures; but after the spraying season was over the survivors ought to recover speedily, providing the queens had not been destroyed.

Taking it all in all, we confess we are unable to give a satisfactory answer; and if any of our subscribers, located in the vicinity or elsewhere, can throw any light on this we should be pleased to have them do so.—Ed.]

Excluders with the Bee-spaces Running Crosswise of the Frames.

In regard to the honey-boards, I think the "break-joint" idea would be right for wood wire excluders slatted lengthwise (or wood-zinc excluders either), if all bee-keepers spaced their frames alike. But they don't. Some—probably most—jam the first Hoffman frame right up against the wall of the hive. Others, using more care and sense, leave a full bee-space there. Then there are others—myself among them—who prefer a spacing of not less than 1½ in. from center to center. In actual practice I have a variety of spacings on account of having a miscellaneous outfit of hives and frames, and an inclination to project and experiment. I am decidedly of the opinion that, in the above styles of honey-boards, openings instead of slats should be next the outside rim.

I am well satisfied, however, that any style of excluder is better with the openings crosswise than with them lengthwise. The easiest way for the bees to get up through excluders is for them to walk up the side of a frame and through a convenient opening in the excluder. When the openings run crosswise they are sure to be convenient, no matter what the spacing of the frames may be. Consider the matter—think of the difference to the bee. In one case it steps from a frame on to the edge of an opening in the excluder, which is easy. In the other case it has to crawl along the under side of the excluder and perform a gymnastic stunt of worming itself through the opening, which is very difficult. Is it any wonder in the latter case that the board should be a "honey-excluder"?

Probably the easiest excluder for the bees to pass through is the unbound zinc with perforations crosswise, set down on the frames. I prefer a bound excluder, however, because I can see that it's there without opening the hive, and can give the bees an opening direct from the outside if I wish.

Ft. McKa, ett, Texas.

F. L. WIGNALL.

An Empty Super Below the Brood-nest to Prevent Swarming.

The discussion on the subject of deep bottom-boards only puts me to doubting again on a difficulty I thought I had solved. In the *Oklahoma Farm Journal* of July 15, 1908, Mr. Wright, of our experiment station, recommended, as a means of preventing swarming, placing an empty super below the brood-nest. It struck me that this was about the simplest and easiest way I had heard of; so, in writing to him later I asked him if there would be danger of the bees building comb in this space. His reply is as follows:

"As to the empty super below the brood-nest I must say that there is but little danger of comb being built in it if the bees have super room above. I have had them working in two supers above the brood-nest, but not a comb built in the empty super below."

W. R. WRIGHT.

This seems to me to be in direct conflict with Dr. Miller. However, your statement, that "this question must be largely one of locality," may explain matters. If so, then I might still try the easy plan. What do you think of it?

Nashville, Okla.

G. E. LEMON.

[We do not understand that this is in direct conflict with Dr. Miller. In any event we ask Dr. Miller, in a Straw, to explain.—Ed.]

Our Homes

By A. I. Root

And they were astonished at his doctrine; for he taught them as one that had authority, and not as the scribes.—MARK 1:22.

And say unto him, By what authority doest thou these things? and who gave thee this authority to do these things?—MARK 11:28.

But the men marveled, saying, What manner of man is this, that even the winds and the sea obey him!—MATT. 8:27.

From our texts as given above you will notice that the Master was constantly challenged as to his authority. Hitherto all the great and learned doctors and teachers had been able to give only their opinion about certain things; and to-day, away along in the twentieth century, it is much as it was in olden times. There is a constant and unending discussion as to who is right and who is wrong. Sooner or later we are all made aware that the best of us are only human. Humanity is infirm, weak, and imperfect. We are making progress, it is true—wonderful progress—but every little while we are obliged to take a step backward. Somebody has made a mistake. In olden times the great doctors bled sick people to make them better; and, oh dear me! I need not say *olden* times, either; for many now living remember the time when the good doctor thought he had to take away a lot of blood, even if the thing the poor patient needed most was *more* blood and better blood; and it has even been suggested that the father of our nation might have lived longer had not the wise doctors in his time decided that taking away some of *his* precious blood was the thing to do. Well, if the doctors were the only people who made mistakes in olden times we should have been comparatively well off, and just *now*, “when doctors disagree, *who* shall decide?”

Whenever any thing new comes up, people at once ask for authority. When I said on these pages that the Wright brothers had a machine that would fly without any balloon, the statement was challenged on every side. People asked, as they had a right to, “Where do the Wrights live, and who are they?” When I published the account of their work and said I had seen them with my own eyes make a trip (of about a mile) through the air and come back to the starting-point, many people began to inquire who A. I. Root was; and quite a few decided my story was just a made-up piece of fiction.

Dear friends, the above is a little preface to a talk I want to give you this morning in regard to authority. In order to introduce the subject, let me make another extract from the *Cosmopolitan* for May, from that article by Upton Sinclair. The last sentence I have put in italics.

Perfect health! Have you any conception of what the phrase means? Can you form any image of what would be your feeling if every organ in your

body were functioning perfectly? Perhaps you can go back to some day in your youth, when you got up early in the morning and went for a walk, and the spirit of the sunrise got into your blood, and you walked faster and took deep breaths, and laughed aloud for the sheer happiness of being alive in such a world of beauty. Now you are grown older—and what would you give for the secret of that glorious feeling? What would you say if you were told that you could bring it back and keep it, not only for mornings, but for afternoons and evenings, and not as something accidental and mysterious, but as something which you yourself had created, and of which you were completely master?

This is not an introduction to a new device in patent-medicine advertising. I have nothing to sell, and no process patented. It is simply that for ten years I have been studying the ill health of myself and of the men and women around me. And I have found the cause and the remedy. I have found not only good health, but perfect health; I have found a new state of being, a new potentiality of life; a sense of lightness and cleanness and joyfulness, such as I did not know could exist in the human body.

I look about me in the world, and nearly everybody I know is sick. I could name, one after another, a hundred men and women who are doing vital work for progress and carrying a cruel handicap of physical suffering. In one single week's newspapers last spring I read that one was dying of kidney trouble, that another was in a hospital from nervous breakdown, and that a third was ill with ptomaine poisoning. And in my correspondence I am told that another of my dearest friends has only a year to live; that another heroic man is a nervous wreck, craving for death; and a third is tortured by bilious headaches. *And there is not one of these people whom I could not cure if I had him alone for a couple of weeks; no one of them who would not in the end be walking down the street “as if it was such fun!”*

Sinclair enumerates a list of his sick and ailing friends; and I agree some of those friends were badly off and no mistake, as he describes it; and yet he declares positively he could not only *cure* every one of them, but he could do it in just a couple of weeks. *Is he right about it?* Can it possibly be true that his scheme of fasting would work such miracles? And this forces the question upon us, “Who is Sinclair? Has he been a sound and sensible man hitherto?” I have a pile of books lying in my lap. One of them was written by Sinclair only about a year ago. The title is, “Good Health, and How we Won it.” At that time he had not quite caught on to the fasting cure; but you will notice he was drifting toward it.

One of the other books is, “Perfect Health; how to Get it and how to Keep it. By One who Has it.” I made a notice of this book in one of our recent issues. It gives an account of the wonderful things that have been done by fasting. Perhaps a hundred witnesses give their testimony.

Another book is, “A New Era for Woman: Health Without Drugs.” This was written in 1896. Like the other it is largely devoted to simple diet and fasting.

The fourth and largest book of all is “The True Science of Living. The New Gospel of Health.” It was written by Edward H. Dewey, and published in 1895. Dr. Dewey was instrumental, perhaps more than anybody else, in introducing fasting. The book made quite a sensation twelve or fifteen years ago. In fact, a good deal was said about it in this journal; and I have wondered considerably that it seemed to drop out of sight until Upton Sinclair and perhaps some others recently revived interest in Dewey.

The daily papers tell us that many people are now trying the fast cure all over our land. They have demonstrated this, if nothing further, that many people can live and even go on with their work for a week or more without food. Is this done under the influence of a sort of mania, or is it true that almost any one of us can get along a week without eating, and not be very uncomfortable?

There is just now also quite a discussion going on in regard to a vegetarian or mixed diet. The Battle Creek folks (and T. B. Terry is pretty nearly with them, if not quite) are recommending a vegetarian diet for everybody. At one time in my life I was a vegetarian for four years. I had, however, plenty of eggs and milk, or at least I had milk regularly and eggs occasionally. Years afterward, while being treated by Dr. Salisbury, I lived for *eighteen weeks* on lean meat alone—not a particle of vegetable food of any sort. That was not the starvation cure; but in reading Upton Sinclair and other authors I am impressed that it was much like it in many respects. Now I ought to be prepared to give at least some reasonable testimony in regard to the matter. The best wisdom I can scrape up on the subject is this: Some people can get along very well, and *perhaps* much better, on a strictly vegetable diet. They would have this one advantage: Where people have both kinds of food on the table at the same time, they are very apt to eat too much; and I am satisfied that a mixture at the same meal is not, as a rule, to be recommended.

Again, there are people, perhaps afflicted people, who can live and enjoy fairly good health on a strictly animal diet—say mostly lean meat. Just a little over a year ago, when recovering from grip fever, both Mrs. Root and myself were almost obliged to depend on beef juice, and, later on, broiled minced lean meat.* So much has been said about the Salisbury treatment in our pages in years past, that I hardly need explain it. Just a few days ago I wrote to Dr. J. M. Lewis, of Cleveland, O., probably the greatest living exponent of the Salisbury system at present, calling his attention to the article by Sinclair. In his letter of reply he makes this statement:

This overeating, in the majority of instances, is the underlying cause of most diseases.

At the close of his letter comes another sentence which I wish to quote:

I notice this, however, that thoughtful people, after experimenting on this, that, and the other, are usually very glad to fall back on to the animal-food diet, sometimes after they have got the system in a none too good condition.

Well, to the best of my knowledge and belief, dear friends, the last sentence is about

* Before deciding on beef juice I tested almost every thing I knew or had ever heard of in the way of food for invalids, in the vegetable line. My poor tortured and diseased digestive apparatus would have none of them. But when the doctor finally said that not a thing must go into my stomach but beef juice, and they procured some made just right, it seemed like manna from heaven; and I am not sure but it saved my life in the crisis. Mrs. Root's testimony was just about like my own.

right. Perhaps I might add that Dr. Lewis is not as yet, at least, much in favor of the fasting cure. If people ate moderately of good wholesome food there would likely be little need of such heroic measures; and, of course, prevention *is* better than cure. But after people have by high living contracted one or more of the fearful maladies that now afflict our people, what should be done? I am fully satisfied that going without one of the three meals is something in the right direction; and in extreme cases I feel pretty sure a fast of three or four days might be of great benefit.

Just think of it! There are people all around us—may be you, my friend, are one of them—who, when they happen to be in a large city, think they must pay 50 or even 75 cents for a dinner, supper, or breakfast; and on the table at home there is a like *posterous* variety of rich foods. No wonder the complaint comes that provisions are so high people can not live and—be honest. Very often a portion of this rich food goes to the pigs or chickens. Kellerstrass says that the thirty pullets that laid the eggs that sold at \$2.00 apiece were fed almost entirely from the refuse from his tables. Now, you know what it costs you for your daily bread. In our last issue I told you that I could make a good meal, feel satisfied, and do heavy work, where the material for that simple meal cost less than one cent. Fletcher has given us a lot of illustrations along this same line. His daily food, when he performed those prodigious feats of strength and endurance, cost only a few cents a meal.

In the July issue of the *Cosmopolitan* a writer takes exception to the fast cure; and he says Dewey, with all his talk and teachings, died at the age of 68; and he intimates that Dewey might have lived longer had he not starved his poor body so many times, and so on. And this brings us to another point: These great and good men (for so I regard them), who were exponents of better and more rational ways of living, ought to live to a good old age. Terry is now a picture of health, a living illustration of his theory. I came pretty near saying *theology*, and God knows we need some theology along this line. Well, now, if Terry keeps right on being well and strong, his "authority" as a teacher will be continually gaining weight. Cornaro lived to be over 100; and his daily life clear up to the last was a standing monument to the truthfulness of his exhortations toward plain and simple food.

When Jesus came from his home in heaven down to earth to live a human life he was authority. No wonder people gazed at him and wondered. Is it possible that the kind and loving Father will see fit to send again some one who can speak with like authority, and sift out error from truth? May God hasten the time. Let us hold fast to our faith, and bear constantly in mind that, for some good reason, we are permitted thus to stumble in uncertainty and darkness. God has given reason and common sense if we will but use them. He has given

us abundant exhortation in his holy word in regard to the importance of holding in check these low appetites, and letting reason instead of inclination rule.

And now to our texts once more. The Jews were constantly questioning the authority of Jesus, and demanding to know where he got that authority and power. Never before since the world was created had any man been able to say to the winds and waves, "Peace, be still;" and with all that has been accomplished in the way of science and art it is hardly probable that any man in human form, unless it is the Master himself, shall in the future be able to command obedience of the boisterous elements of nature. Upton Sinclair has declared that every one of his friends with their serious maladies could be cured *in two weeks* if they would put themselves under his instruction. I hope he is right about it, but it is a question. The Lamb of God that taketh away the sin of the world never made a failure, and he never lost a patient. He said, and says now to the great wide world of humanity, "Come unto me, all ye that labor and are heavy laden, and I will give you rest." Just think and consider a moment. What would we think of a human being should he utter such words as these? Jesus continually gave *proof* of his authority. The miracles that followed at every step attested continually that he was the only one of whom God might say, "This is my beloved Son in whom I am well pleased." Not only did the winds and waves obey him, but when five thousand people were without food, by a single word the five loaves and two fishes fed the multitude, and twelve basketfuls of the fragments were left. Not only did the elements of nature respond in quick obedience to his simple words, but when Lazarus was dead and had been buried four days in the grave, at his quiet command, "Lazarus, come forth," the dead man promptly came to life and stepped forth among his friends. At the recent conference to which I have before alluded, a talented minister of the gospel gave us quite a discourse in regard to the miracles. If I interpreted him correctly he was endeavoring to reconcile those wondrous miracles of Christ with modern science and investigation; and he even suggested that, with a better knowledge of the "underlying laws of nature," we might even now perform, or approach to a certain extent, some of these miracles. The whole subject was painful to me; and in the discussion that arose at the close of the paper the author of it was rather severely handled by some of the older doctors of divinity. I wanted to say (but there did not seem to be time nor opportunity) that Jesus himself constantly discerned that his power to perform those wonders came direct from the Father above; for he said plainly, "Of myself I do nothing." In the case of raising Lazarus, just before he called him back to life he uttered this wonderful prayer to his heavenly Father: "Father, I thank thee that thou hast

heard me. And I knew that thou hearest me always; but because of the people which stand by I said it, that they may believe that thou hast sent me."

Now, in the above prayer he states very positively and plainly that the power which he used came directly from God. In fact, it was *God's miracles*, performed in response to the request from that well-beloved and only begotten Son. Jesus explained and declared to all the multitudes that his power was a *miraculous* one. This world of ours is full of tricks and deceptions, not only in business, but our doctors who are healing the sick (or trying to do so) sometimes use tricks and deception; yes, and I say it sadly, not all of those who stand in our pulpits as God's servants are *entirely* free from the practice of little deceptions. Now do not understand, please, that your old friend who speaks to you on these pages claims that *he* is entirely honest, and that all the rest of mankind are bad. That simple little sentence uttered by the *Sunday School Times*, that "deception is always wrong," hits me every little while. God knows I am *trying* to be honest and sincere from daylight to dark, and every day in the week; but with shame I confess that a good many times I can look back and see that I have made bungling work of it.

Now, then, friends, let us take a look at that wondrous man who was part human and part divine. Get your Testaments and read them over again, and see if you can find where he *ever* deceived or misled. He never made a mistake, for his heavenly Father constantly watched over him and protected him from making mistakes; and that same heavenly Father, through his only Son, will watch over us and protect us in like manner, if we go to him and study his holy word.

High-pressure Gardening

By A. I. ROOT

MY CORN STORY.

Now you must be patient with me while I tell my story; for there is not only one but more than one important moral to be gathered out of it. On p. 452, June 1, I told you about testing four bushels of ears of seed corn. Well, *some* of you, at least, know we had "catching weather" at corn-planting time. Finally we got the ground in pretty good trim, and it was all ready to be marked out and planted. As we have only about half a dozen acres in corn we do our planting with hand planters; and if a man has good seed, and understands using the hand planter—that is, if he has learned to keep watch and to be sure the planter *plants* every time he sets it in a hill, he will be pretty sure to have a good stand. When the ground and every thing was *just right*, several of my friends protested, because I thought I had not time to attend our year-

ly conference. But I finally decided that I had better take in the last day, even if I did not do any better. I have told you about it elsewhere. Well, after I got out of sight the team that was marking out the ground was needed for drawing basswood lumber from the hill to keep our machinery going, because we were running nights just then. Our farmwork is understood to be secondary to the factory business, especially when we are running night and day. Well, my good friend Leonard did not succeed in getting the use of his team to mark out the ground until along in the afternoon; and then he urged having two good men follow right after him and plant corn *at once*. But our teamster has so many calls in different directions, especially in the rushing season, that he can not always have his own way. The foreman of the lumber-yard said there would be demurrage on some of the cars of lumber unless they were unloaded at once. Then somebody suggested that if I were at home I certainly would not object to letting the corn go until morning.

Let me say here, that, before I went away, I noticed the barometer indicated rain, and so I left orders to rush the corn-planting. Leonard finally succeeded in getting two men to plant about an acre before the whistle blew for quitting.

We went over to the conference, about thirty miles away, with our automobiles; and in order to take in the closing address of the evening the boys proposed to stay all night and go home early in the morning. But remembering what the barometer said, I urged pretty vehemently that we would better make the trip home by moonlight, even if it did make us a little late. Before morning our people were very glad the two automobiles, pretty well loaded, did make the trip in the night, for it was raining before daylight, and it kept raining, off and on, for *almost two weeks*. In fact, it kept the ground so wet that the first acre was up and growing beautifully before we could possibly plant the rest of the field; and when we did plant the rest of it, it rained again; and it was cold, as you may remember, almost up to the middle of June. At least one-fourth of the second planting rotted, and in low wet places every hill would be missing for quite a piece. But that first acre we planted before the rain had got agoing, and it grew finely in spite of the cold and rain. Something else *also* grew finely. It was the weeds all through that second planting; and when the folks proposed planting a third time right in among the weeds that were already an inch high or more, I protested. It would have been *less work* to cultivate the second planting all up and fit the ground all over again, and it might have been the wisest thing to do; but as three-fourths of the field was up and growing fairly well I decided to send two men with nice sharp hoes to give that part of the field a good hoeing. Wherever there was only one stalk left in a hill we planted some more corn by hand. Where a hill

was missing entirely we cut up the weeds thoroughly and *then* planted with a hoe. With a boy to drop, two men with a hoe made fairly good speed. There was one advantage in planting with hoes. We could have the four or five grains of corn spread about more, and our experiment stations have decided that it is quite an advantage to have the four stalks four or five inches apart instead of having them all in a bunch as the hand planter often puts them. As it is, the prospect is now, June 21, that we shall have a very fair stand of corn; but it came by three different plantings during a period of two or three weeks.

Now, the moral to my story is that the *successful* farmer *must* be up and wide-awake, and on the alert.* I think it is better to work over-hours when the ground is ready and the barometer indicates a storm. But you know, of course, there is quite a feeling in some places to the effect that "farm hands" should not be asked to work more than ten hours a day like other folks. Circumstances often alter cases, and alter them tremendously. I would willingly give a good man, who is willing to work over-hours occasionally better pay than one who thinks he has got to stop, no matter where you are, when quitting-time comes. Now, I am not much of a farmer just now; but I think I have learned *some* things from experience. Some of the older and successful corn-growers may laugh at my experience. But I think it will *help* some of them. Just one word more:

When my corn had to be planted the third time, all our nicely selected and kept seed corn was gone. The men started for the crib to get some more. I said, "Not so till I have tested it in the greenhouse;" and as it was Saturday night, by Monday morning I was ready to announce that the corn in the crib was fit to plant. By preserving an incubator temperature and the right amount of moisture you *can* test seed corn in 48 to 72 hours.

My second moral, and one that I have been thinking over and praying over, is along in the spiritual line. Is it the duty of a busy farmer to leave his work at corn-planting time to attend a State or county conference of his church? I think we may honestly make a mistake in both directions. My good friend Leonard said I lost thirty or forty dollars by not being on hand and pushing things as I have been in the habit of pushing all my life when I wanted to

* Just as soon as a piece of ground is properly fitted for seed or plants, the seed or plants should go in without waiting a single minute if possible. I have had some sad experience in years past, where something prevented putting in the seed the very minute, you might almost say, the ground was ready. In growing weather, weeds start very quickly; and when they once get a little ahead of the crop it is a difficult and expensive matter to get rid of them. One great reason why horse weeder are not used more is that the weeds are permitted to get a little the start of the crop; and this very thing is why transplanting has many advantages. If the weeds can be allowed to make a start, and *then* work the ground thoroughly before putting in the seed, of course that helps a great deal.

make a success with my work. Well, if I had stayed away from conference I should have failed to hear that missionary tell about how China had put her foot down on the cigarette trade and the opium traffic. Some of you may say that my talk along in that line was, perhaps, of more benefit to the coming generation than hundreds of acres of thrifty corn-fields. God only knows. But he knows I *tried* to do my duty.

Now, I hope my good friends of the clergy will excuse me if I criticise *conferences* a little. Although I have been greatly blessed and profited in attending many conferences, I have also felt that much valuable time was wasted, or I do not know but I should say *worse* than wasted, in discussing unimportant doctrinal points. I have already alluded to a paper read at that same conference in regard to the miracles of Christ. In this day and age of the world, with electricity doing such wonders, and flying-machines gliding over our heads, it vexes me exceedingly to see educated men waste their precious time in matters pertaining to bygone ages. Here is what our good friend Terry has recently said in *The Practical Farmer*. Read it over, and see if you can not join with me in a hearty amen to the sentiment.

Carl S. English, Camas, Wash., says: "What the world greatly needs to-day is ministers who will teach from the pulpit just such truths in regard to right living as are found in *The Practical Farmer* from week to week." How many times I have felt this way! One goes to church, and often hears a long sermon about things that happened thousands of years ago. Then he goes home and thinks no more about it. It was of little practical use for every-day life. Oh that ministers would study correct living for this world, and teach it—air, water, sleep, food, sunshine, exercise, etc.! They could make us better men and women in every way. The best Christians are in healthy bodies.

SOUTHWEST FLORIDA IN THE SUMMER TIME.

So many questions are coming in, not only in regard to Florida for a winter home, but in regard to it the year round, I have thought best to give you clippings from letters from some of my Florida neighbors:

I was pleased to hear from you again and to learn that you contemplated coming to Florida so soon. I think that August will be the best month for you to come, as you will at that time find some of the summer fruits that you have not yet seen.

My potatoes turned out very well, about 200 bushels to the acre, as I estimate them. My best potatoes were where the vines were the largest. We are having lots of green corn now; also watermelons, muskmelons, tomatoes, and peaches. Your brother and wife seem contented and happy.

Bradentown, Fla., June 4.

E. B. Rood.

POULTRY AND BEES IN LEE CO., FLA.

This looks like a great bee country. The orange and grape-fruit bloom are followed by pennyroyal, then comes the saw palmetto, and that will be followed soon by the cabbage palmetto. All of these are rich in nectar. No one near here has movable-frame hives; but the old box hive is in evidence, and its occupants have stored a rich harvest. The woods seem to be full of wild bees. A colony of hybrids occupies a hollow cypress about 200 yards from where this is written. They are waiting to be put on to Langstroth frames as soon as a hive can be obtained.

Chickens flourish here. Their great enemy is the "jigger flea." Moisture is sure death to that pest. On that account hen-houses are here built without roofs so that the rains may drown the fleas. A framework to carry roosts and nest-boxes, and covered with poultry-netting to keep out the varmints is the wisest construction. A Virginia creeper or a grapevine trained over it for shade, and you have the ideal house. Food is abundant. Green stuff grows the year round; houses are cheap; chickens are healthy; eggs are plentiful in the winter, and prices are good. What more can one ask? We are camped at present, waiting until we can move into the houses we are building on our homesteads. We bought an old hen and 27 chicks, newly hatched, for \$1.88, about April 15. Something unknown got one chick; 26 chicks weaned and feathered, not one of which has shown a symptom of disease—sturdy, healthy, and growing like weeds tell the tale of one brood in this poultryman's paradise.

The writer's experience with bees and chickens has been gathered in Southwest Missouri, in the Bluegrass and in the hill country of Kentucky, and in that rich farming section, Central Indiana. They are all bee and chicken sections, but none of them are to be thought of in comparison with this favored region.

For many years the writer led a very busy life. He had only a little time for his pets. Now in his old age he is planning to take it easy on one of Uncle Sam's free farms in this genial clime, and play with the bees and the chickens. He is thankful that a beneficent government has a homestead to give him where he can grow his "winter garden" in comfort and spend his declining years cared for by his insect and feathered friends. He will have no land to sell for many days, and pens these lines only in the hope that some one else among your readers who needs the advantages of this land of promise may have his attention called to it.

Denaud, Fla., June 6.

FRANK M. BALDWIN.

Perhaps I should suggest that the writer of the above has been in Florida only since last October. After he has had a longer experience perhaps he will not be so enthusiastic; and yet I agree with him that many parts of Florida do offer some unusual advantages for bees and poultry.

THE TRUTH ABOUT THE POULTRY BUSINESS NEAR GREEN COVE SPRINGS, FLA.

On page 366, June 1, I clipped from an advertisement in the *Up-to-date Farmer* the following:

Five years ago a Northern settler, with very little money, located near Green Cove Springs, Fla., and started in the poultry business. To-day he has about 3000 chickens, and receives \$13,500 annually for eggs alone.

Now, for the real facts in the matter see the letter below; and, by the way, my impression is that the greater part of the extravagant stories told by land agents will be found, when chased down to the real source, to be just about like what friend Hall tells us.

I noticed in June 1st GLEANINGS something about a poultry-farm near Green Cove Springs, that has about 3000 hens. I wish to tell you there is no such farm in Clay County, because I took the census in precincts 1 and 2, including Green Cove Springs town, and I am personally acquainted with almost every family in the county. We (myself and wife) keep between 200 and 300 hens, and raise from 200 to 500 chickens per year, and I think we sell as many eggs as any one family in the county. I know we made by far the best report on poultry and eggs of any one in precincts 1 and 2. We use an incubator, and set hens at the same time, and give the chicks all to hens, and have never used a brooder. We are much interested in your poultry writings, as they agree with a good deal of our 27 years' work with poultry.

We now have 21 very fine colonies of bees; have made more honey this year than ever before, and are learning something new almost every day about

bees. We have had them only three years. The first swarm came to us. We enjoy caring for them, and they truly reward us for our work.

Green Cove Springs, Fla., June 6. J. E. HALL.

THE TRUTH ABOUT THE ST. CLOUD SETTLEMENT FOR THE OLD SOLDIERS IN FLORIDA.

We clip the following from the *Rural New-Yorker*:

In my judgment the St. Cloud, Florida, proposition is one of the greatest outrages that has been imposed upon the old soldier. I had heard a great deal about it, and made a special trip to St. Cloud to see it. Language could not express my disgust and contempt for the parties who were working the scheme. Neither could words express the pity and sympathy for the old boys who were being worked. I really think it is a proposition that the United States government should investigate.

Columbus, O.

THOS. E. KNAUSS.

I heartily agree with the *Rural*, that working *any* class of people is bad enough; but when it comes to working their schemes on the few old soldiers now left among us, it *is* time that the general government should make an investigation.

IS ANY PART OF FLORIDA "FROST-PROOF"?

Dear Mr. Root:—Will you kindly tell me if there is any land in Florida where there is no danger of frost? Was there any at Bradentown where you were that did any damage? And do you consider it still more safe south of Bradentown toward Fort Myers? There are so many conflicting reports that I should greatly appreciate your judgment in the matter. Good parties tell me that Manatee and DeSoto counties are practically below the frost-line.

Hudson, O., June 16.

T. B. TERRY.

Manatee County and many parts of De Soto *are* practically frost-proof. Last winter a lot of stuff was killed on our grounds about Christmas time, but all or nearly all has started up from the ground, and this frost, as I have explained in GLEANINGS, was the most severe for perhaps the past fifteen years.

Now, there is still another point to be considered. There are many places in our neighborhood where frost did more damage than on my place, and, at the same time, there are other localities close to the bay where there was practically *no* injury. Oranges were very little damaged in most localities. So far I know, there is no spot in Florida, that is, no region of any considerable extent, where there is never *any* damage from frost. Even down at Miami, tomatoes have a few times in the past ten years been damaged quite a little. Fort Myers is further south than Bradentown, and would naturally be a little more secure from injury; but there are places around Ft. Myers, say where there is not sufficient air drainage, or a depression in the landscape, for instance, where the cold air settles a good deal as water settles in a valley after a big rain. In these cold valleys frost often does quite a little damage, while on ground that has good air drainage there will be no damage at all.

Still another thing must be considered. The islands out in the water are often entirely free from any injury by frost when the main land suffers more or less. There has never been a freeze, for instance, on the

island where I spent two winters, to injure vegetation; but there have been times when there was a cold north wind that blighted the stuff (cucumbers, for instance) almost but not quite so badly as the frost; so you see there are many things to be considered in asking for a locality or region entirely free from frost.

THE EUCALYPTUS IN FLORIDA; MORE ABOUT IT.

When we came here 21 months ago there was growing in our front yard a young switch of eucalyptus. It has been growing without care, and is now a nice tree about 15 ft. in height. Its stem measures 1½ inches in circumference half a foot above ground. I send you clippings which show that these trees may be grown on a large scale in Lee County, in the near future. There is now a eucalyptus nursery owned by the K. U. Nurseries, Estero, Fla. I also take pleasure in sending you address of *Florida Everglades Review*, Chicago, Ill. That paper speaks of success with alfalfa and alsike clover in South Florida. It seems to me that where alfalfa and clover succeed, sweet clover also ought to grow.

Estero, Fla., June 13. MRS. THERESA YOUNGER.

I am very glad to know that there is a prospect of some varieties of eucalyptus succeeding in Florida. Mr. Reasoner, of the Oneco nurseries, informed me last winter that the eucalyptus usually grown in California did not seem to succeed well in Florida; but he said there were some new varieties that gave promise of success. In regard to alfalfa, alsike, and other clovers in South Florida, I know they do sometimes succeed for a while; but my impression is that the hot wet summers generally use them up. The Crenshaw Seed Co., of Tampa, Fla., although they advertise alfalfa seed, wrote me recently that, if there was any place in Florida where alfalfa was a success, they would be glad to know it. And, by the way, I would suggest that a periodical printed in *Chicago* does not usually give very correct information as to what may be grown in *Florida*.

EUCALYPTUS AS A REMEDY FOR VERMIN ON CHICKENS.

On page 364, June 1, is a letter from Jas. A. Nelson, Escondido, Cal., headed "Vermin on Chickens Prevented by Eucalyptus-trees." I wish to state I gave that remedy a thorough trial ten years ago. There is nothing in it. I had chickens house-surrounded by eucalyptus-trees; made roosts of eucalyptus poles, and kept branches of trees in the houses; but not a louse went away.

Metz, Cal., June 13.

H. E. THAYER.

The above is not a surprise to me; and, in fact, many of the remedies proposed for chickens and people are, I have reason to believe, based on misconception or misunderstanding. The remedy is used, and the chicken or person gets better and recovers, when the recovery was really due to some outside influence. Well, if the eucalyptus is not a remedy for poultry vermin, discussing the tree has brought out good in another way. I have several reports to the effect that eucalyptus does succeed in Florida, even in our own town of Bradentown. See the following:

EUCALYPTUS IN SOUTHWESTERN FLORIDA.

Friend Root:—I notice what you say, June 1, page 364, about there being no eucalyptus-trees in Florida. When I was in Bradentown in 1908 friend True-

blood pointed out a eucalyptus-tree to me. It was quite tall, and friend T. said it had made a remarkable growth in a few years. I don't know the species. I am not familiar enough with the town to know now what street it was on. I have just finished reading Terry's book on health. I have been studying this question for several years, and in the main I think Terry is correct, although there are some things I am sure he is mistaken about. One thing is in not getting any strength from our food. We certainly get a large part of it from the food we assimilate.

Martinsville, O., June 20. E. C. GARNER, M. D.

It is now up to our good friend Trueblood to stand up and explain.

Poultry Department

By A. I. ROOT

"STICK-TIGHT FLEAS;" MORE ABOUT THEM, ETC.

We have had and are still having an awful fight with those chicken fleas. I think I can tell the whole tribe of poultry-journals something about chicken fleas. I find their main lodgingplace is under the bills of small chicks. You will find them there when there is no sign anywhere else; and after they have got a start and sapped the life out of the chick, what will kill the fleas will be fatal to the chick. They bore in so I have to take my watch-tweezers to pull them out, and even then they come hard. I have lost a good many chickens from fleas. I made a whole washtubful of solution yesterday, and used the sprinkler and sprinkled all the floors and sides and roosts of the building. I found the old nests down deep full of chicken lice also. The way Wesley sprayed did not kill them. It simply kept them off the surface. I am now going to get a bag of lime and slack it, and spread it over all the different houses on the ground, and keep the houses clean. I think the dose I gave them yesterday will settle them. I went over to Mr. Abbott's the other night, and he said he had engaged a barrel of crude oil at \$4.50 that they sprinkle the streets with. With this he expects to keep his place free from vermin. I think if the houses were wet down with that for a while it would make a hard and smooth surface in all the houses so that no vermin of any kind could live in them.

I get only about two dozen eggs a day now. Several hens are wanting to sit. I have four hens sitting now on Buttercups. The Buttercups lay very well. One hen is clucking, but has not offered to sit as yet. If nothing happens I shall have a flock for you next fall. My wife says, just as Sue does, that those chickens keep one closer than any business. I do not want to leave them at all, for if I do something is sure to go wrong.

The auto behaves splendidly. I think a great deal of it. Once in a while it troubles a little to start, but it is my fault in not watching when it troubles. The roads have been fearful between here and town; but the rain has helped somewhat. I like it better and better here. The summer so far beats Arizona. I wear just my kakai pants and a blue shirt, and go barefoot among the chickens—no flies nor mosquitoes as yet to bother. I have got my net for fishing, but do not have time to use it. I must clean out the creek, as it is full of snags and stones.

Your front yard is pretty well dried up, and Mr. Rood's is more so than ours; but I think the last rain will help it. Most of the trees are doing fairly well. Those that blossomed so full fell off most. I am putting palmetto roots around those in the back yard, and protecting them from the chickens. They scratch the dirt away if I do not.

Bradentown, Fla., June 14.

J. H. ROOT.

THE SEXAPHONE—THE INSTRUMENT THAT TELLS WHETHER AN EGG WILL PRODUCE A PULLET OR A ROOSTER.

Mr. A. I. Root:—I take great interest in your poultry notes, and have been expecting you to have heard of the sexaphone long ago, making sure that some one would have drawn your atten-

tion to it. Now that I am writing to the firm I will enclose report of it from the *Review of Reviews* for May, last year, which will explain. It has been on sale here for the last six months. A great many believe in it, and some of my family do; but I can't bring myself to believe that the animal magnetism of each sex in an egg can be detected by such a simple instrument. I can't get it to work to my satisfaction. We had a setting of nine, and got six pullets. We sent the sexaphone to a party who believes in it, and who had a good strain of poultry. It seems to me that when the little steel ball begins to move, the person, unaware, through sympathy, gives it that movement, whichever movement it may take. Hang it on a nail instead of on the finger and you get no results; or blindfold, when trying it, you get no decided results.

Newboro, Oamaru, Mar. 10.

JOHN ALLEN.

With the above letter came a leaf torn from the English *Review of Reviews*; and this sheet contains a picture of the wonderful instrument. Just as soon as I read the above letter I decided the machine was on the same plan as the planchette board that made such a stir over forty years ago; and it is certainly a disgrace to the present state of civilization to see a periodical like the *Review of Reviews* not only giving space to a description of the thing, but also illustrating the "humbug toy." See page 240, April 1.

CARBOLINEUM AS A REMEDY FOR VERMIN IN POULTRY-HOUSES; ALSO SOMETHING MORE ABOUT STICK-TIGHT FLEAS.

Here is a remedy for ridding a poultry-plant of mites and lice, worth ten times all the other remedies recommended. Two of my neighbors' ranches as well as my own were overrun with vermin—so much so that one of them lost a good part of chickens and young pouls. We had tried almost every thing, only to be defeated. Last fall I got a gallon of carbolineum, and we divided it among the three of us. I used less than one quart in twelve colony houses.

I applied it to the bottom of the roosts with a four-inch brush. That was over six months ago, and I am not afraid to offer \$1.00 per mite or louse if found in any of my twelve colony houses. Here on the coast it costs \$1.75 per gallon.

If it would drive away fleas such as bother poultrymen in Florida it would be great, for I have raised poultry in St. Petersburg, Fla., and know what a bore vermin are to the poultry-raiser there. Langley, Wash., June 7.

S. S. STULTS.

My good friend, I think you are right about it, or at least pretty nearly so. If you will turn to page 1214 of our issue for Sept. 15, 1908, you will find that I made a poultry-house here in Ohio, and sprayed all the lumber, and every thing put into it, with carbolineum.* I said there that the *Rural New-Yorker* and the *Country Gentleman* both recommended this preservative, and I am glad to indorse what you say by telling you that I have never been able to find mites, lice, or fleas anywhere on the premises, nor on any of the chickens, big or little; and it is now two years since the carbolineum was put on the building. I was not able to get carbolineum in Florida, but I obtained of a neighbor some zenoleum, which he thought was much the same thing; but it did not banish the sticktight fleas. In fact, Dr. Conkey, of Cleveland, who manufactures every thing in the way of medicine for the whole poultry business, wrote me recently that he felt sure that neither his lice-killer nor any other would

*Address Carbolineum Wood-preserving Co., 349 West Broadway, New York.

drive off the stick-tight fleas. You have got to catch the chickens and put some sort of grease on the comb, on top of the head, and on the throat under the bill. My opinion is that any sort of grease or oil will do the business. Carbolated vaseline has been recommended, and one of our readers recently wrote me that just common "chicken oil" is the best thing in the world. We all know this would not hurt chickens, old or young; and when you are killing fat hens occasionally, chicken oil will probably be the cheapest thing in the world.

JAPANESE BUCKWHEAT—A PROTEST.

I got $\frac{1}{4}$ lb. of Japanese buckwheat of you when first out, and increased from it, but was disappointed. Old sorts will beat it over and over. It's all nonsense to plant late—the earlier the better so as to hit cool weather in the spring, like oats seeding, and thus avoid late frost. Old gray Indian wheat, so called, is one of the most productive, is a fine grower, etc. Jap. is apt to blight badly, or did with me on the Hallowell farm. Better leave it alone.

Mechanic Falls, Maine.

E. P. CHURCHILL.

Friend C., no doubt the old gray buckwheat is better for you away up in Maine than the Japanese; and it is true that there are quite a few localities where the old-fashioned gray or silverhull is better than the Japanese. But there are other places where the Japanese has given a much larger yield and plumper grains than the old sorts. We should be glad to get reports from others in regard to the different varieties of buckwheat, both for honey and for grain.

EARLY APPLES IN JUNE AND JULY.

Dear Sir:—If you want early apples, and California is not too far for you, you may write to Jacobs Brothers, Visalia, Cal. They have a few acres of Red Astrakhan which ripen here in early June. The quality is generally fine, and of large size. They are good people.

Visalia, Cal., June 8.

OTTO LUHDORFF.

Many thanks, friend L.; but the last time I was in California Early Astrakhans were selling at a nickel apiece, and by the time we paid express charges on a small lot here to Ohio they would be rather expensive "medicine." And that reminds me that I found about the finest Red Astrakhans I ever saw in my life up in the Black Hills region of South Dakota; but they were *there* worth a nickel apiece.

PASSENGERS DINE ON A SKY-LINER.

The papers inform us that the monstrous dirigible balloon Deutschland now carries passengers on a hundred-mile trip for an even \$50.00, "meals included." As she made her first trip and got back again inside of three hours (ready for *another* trip) it looks as if it might be a *paying* investment. But notwithstanding the price, you have got to buy your ticket two weeks ahead to be sure to engage a passage, as this sky-liner carries only twenty passengers. Of course, this is not a real flying-machine. It is a big balloon with propellers. When they get to carrying passengers in an aeroplane without any gas or gas-bag about it,

then we may begin to "sit up and take notice," particularly as to what may be going on in the air over our heads.

Temperance

THE TEMPERANCE WAVE AND WHAT IT HAS ACCOMPLISHED.

We clip the following from the *Woman's National Daily* of June 18:

Figures issued recently by government statisticians show that within the last two years the people of the United States have lessened their expenditure for alcoholic beverages by an amount estimated at \$110,185,600. When one stops to remember that this enormous decrease is shown despite the great inflow of foreigners, most of whom are habitual users of alcohol in some form, the figures are pregnant with hopeful possibilities.

Now, it probably is not worth while to inquire as to whom the credit belongs for saving the nation over 110 million dollars; but I think the great wide world will agree that the Anti-saloon League, with its persistent and aggressive pushing, has had much to do with it. Of course, there is still a big job ahead of us; and the liquor forces, with their millions, are working hard to undo what we have already accomplished. But God is on our side, and we shall surely triumph.

A "STRAW" THAT SHOWS WHICH WAY THE WIND IS BLOWING.

The following sentences come at the close of a business letter:

Mr. Root:—I understand that you are a *dry* man. I am that way myself. What we want next is State-wide prohibition. We are bothered by Parkersburg; but I think the *whole State* of West Virginia will be dry after next winter.

Marietta, O., June 18.

B. S. SPRAGUE.

"TWO KINGS DEAD, SUICIDES BY THEIR OWN HANDS."

Among the other good things in *Good Health* for July is an article with the above heading; and below are two brief extracts from that excellent journal. Here is the first one:

Edward, king of England, is dead, and Mark Twain, king of letters in America, is dead, and both have ended their earthly careers without good justification for thus abruptly abandoning their stewardships.

Edward died of smoker's throat, and Twain died of smoker's heart. In other words, both these distinguished persons smoked themselves to death.

And here is the other one.

Trust in this foolish doctrine of immunity led Mark Twain, the recognized king of American literature, to cultivate death most assiduously, smoking, according to report twenty strong cigars a day, and a pipe between times. His physician is reported to have said that smoking had nothing to do with his death; but he died of angina pectoris, a disease of the heart which is one of the best recognized consequences of chronic nicotine poisoning.

If you want proof of the two statements above, read the whole article. While I, with the rest of the world, admired Mark Twain it always gave me pain to see him pictured with a cigar in his mouth. No doubt the example he set before the world has been the means of starting hundreds and perhaps thousands of boys into the habit of using tobacco.